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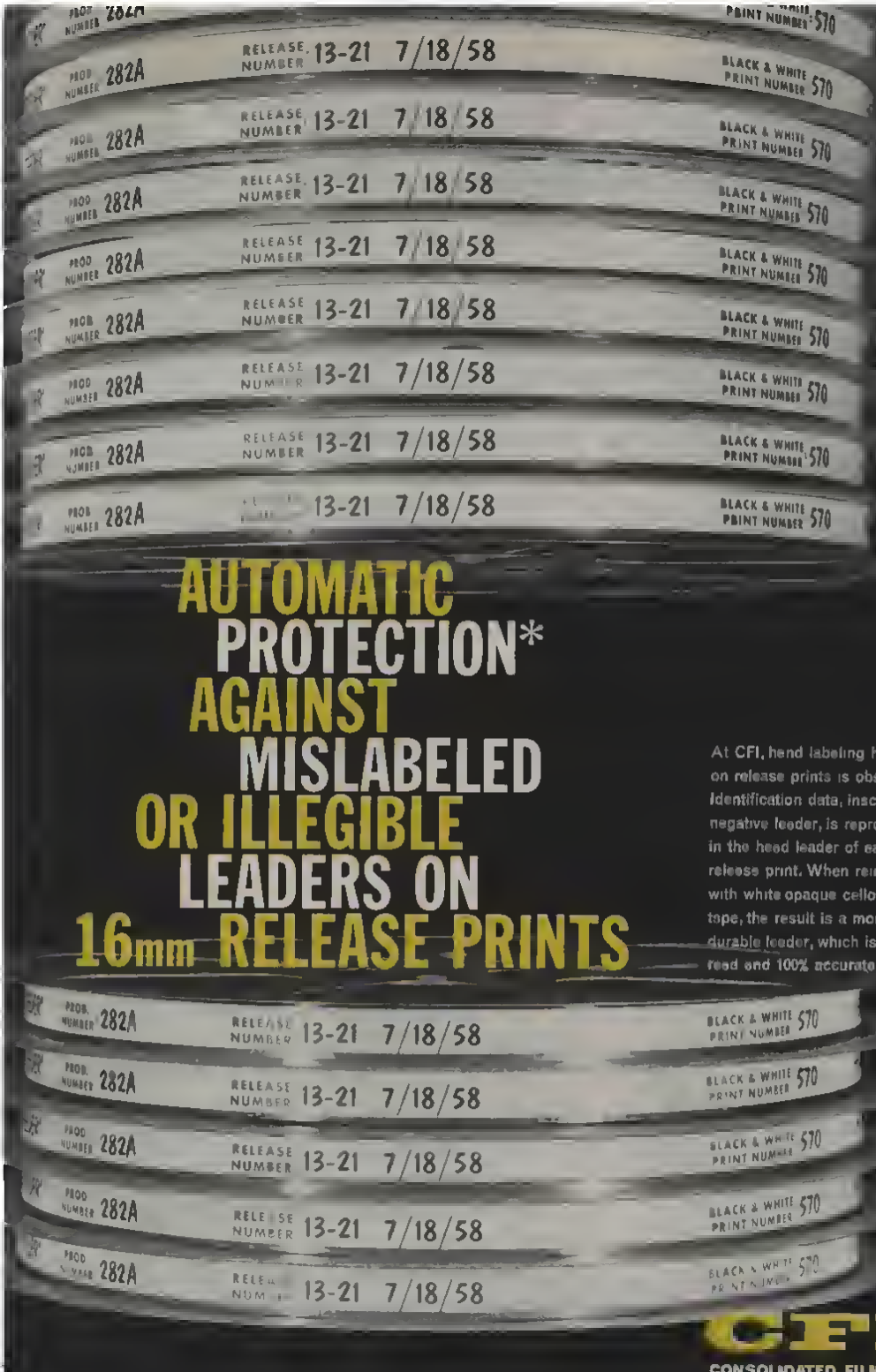


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AMERICAN
# Cinematographer

January, 1959 • Vol. 40, No. 1

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**ON THE COVER**

FILMING A TWO-SHOT for Ranner Productions television film series Night Court, staged and filmed in Hollywood Directing the photography is William F Whitley, A S C, third from left Joseph V Mascelli tells how this successful new TV show is photographed beginning on page 32 of this issue

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**IMPORTANCE OF VARIARLE SHUTTER** ??
*Important camera feature provides still camera exposure control in poor light plus ability to shoot fast action without blurred images.—By John Forbes*

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**EDITORIAL AND RUSINESS OFFICE 1782 HORTH ORANGE DRIVE, HOLLYWOOD 28, CALIFORNIA. TELEPHOHE HOLLYWOOD 7-2135.** AMERICAN CINEMATOGRAPHER established 1920 is published monthly by the A S C Agency Inc, 1782 H Orange Dr, Hollywood 28, Calif SUBSCRIPTIOH United States and Canada $4 00 per year, Foreign, including Pan American Union, $5 00 per year Single copies 35 cents; back numbers 40 cents foreign single copies, 40 cents, back numbers, 45 cents Advertising rates on application Copyright 1959 by A. S. C Agency, Inc Second-class postage paid at Los Angeles, California

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Scene from "Road to the Stars," which won the top award in the Industrial Film Producers Association competition, shows camera unit in plant with Mitchell on track-mounted dolly. Producer-Director was Bill Adams

Camera requires great flexibility from long range to close-ups like this which shows the Mitchell shooting a precise view of panel operations in the recording center during a test

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# INDUSTRY NEWS

*News briefs of industry activities, products and progress*

**A method of** utilizing color television to improve color motion pictures and still photography has been developed by Hazeltine Research Corp., Little Neck, N. Y. Company has developed an instantaneous electronic color film analyzer which can display at once on a color television receiver a positive color picture from a color negative. This picture will show exactly the quality of positive print that can be obtained from the negative in the actual film printing process.

The instrument permits immediate adjustments for desired density and color balance by providing instantaneous data for the entire film and for area masking as well. It also allows for full use of the large tolerance in negative color film to offset poor exposure, according to the company.

It has been announced that a prototype model of the Hazeltine Analyzer has been used by several large motion picture film processing laboratories, which reported excellent results.

• • •

**Dates for two** important Workshops to be presented by The Calvin Company, Kansas City, Mo., have been set by the company. February 2 through 4, 1959 are the dates selected for the 13th Annual Motion Picture Production Workshop to be presented on Calvin's Kansas City sound stages.

The three day session will be devoted to an analysis of the process of producing motion pictures in the industrial and allied fields. Sessions will include screened illustrations, displays, and talks by leading film producers and Calvin staff personnel.

The Third Medical Motion Picture Workshop, sponsored by the Veterans' Administration will be held in the Calvin studios March 16, 17 and 18, 1959. The three days will be devoted to discussions of processes employed today in producing motion pictures in the medical and allied fields.

There is no charge for attending the Motion Picture Workshop or the banquet that concludes the session. A fee of $100 is required of those attending the Medical Workshop sessions. For information and reservations, write The Calvin Company, 1105 Truman Road, Kansas City 6, Mo.

• • •

**A weekly newsreel** in color, 1,000 feet in length is planned by the J. Arthur Rank Organization, London, starting early this year. Cameramen will use Eastman Color negative. New color newsreel will replace Rank's Gaumont British and Universal Newsreels.

• • •

**Thanks to a government** appropriation of $60,000, the paper-film reclamation project of the Academy of Motion Picture Arts and Sciences, begun in 1948, will be resumed and completed.

The two year research, led by former Academy President George Seaton, for revenues necessary to reactivate the dormant project ended late last summer when Congress okayed the appropriation to the Library of Congress. Immediately following, Kemp Niver of Hollywood, inventor of the Renovare process used to convert the paper to film, was awarded the reclamation contract.

The paper prints of motion pictures originated in the early days of film making as a means of obtaining a valid copyright, and picture important events and personalities between 1894 and 1912, when the practice was abandoned.

The Academy spent approximately $300,000 on the reclamation project between 1953 and 1956, when available funds were depleted and the project was abandoned.

• • •

**H. W. Remerscheid,** Vice-president of Bell & Howell Co. and head of the company's western branch in Glendale, Calif., has retired after 32 years of service. In charge of the company's western operations for the past 19

Continued on Page 11

**Auricon 16mm Sound-On-Film Cameras run**

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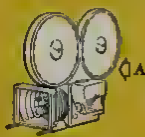

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| Approximate weight of Arricord | 72 lbs. |
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Sincerely yours,

Lloyd Thompson,
Executive Vice President

Continued from Page 6

years, Remerscheid joined B&H in 1926 as a tool maker and inspector. In 1931 he was transferred to the company's west coast branch, then located in Hollywood, and was named western district manager in 1937. He was elected vice-president in 1939.

He is an Associate Member of the American Society of Cinematographers and a member of the Society of Motion Picture and Teelvision Engineers and the Academy of Motion Picture Arts and Sciences.

• • •

**The technique used** to make X-ray motion pictures waa the subject of a two-day symposium in November at the University of Rochester Strong Memorial Hospital in Rochester, N.Y.

George M. Corney of Kodak Research Laboratories discussed the important characteristics of films for cinefluorography, the role of film spectral sensitivity in matching screen emission, and the characteristic curves of photographic film that determine contrast and exposure latitude.

Frederick M O'Brien, Jr.. of Kodak's Apparatus and Optical Division discussed X-ray recording cameras, tbeir mechanism, and their suitability for X-ray motion pictures.

The session concluded with a seminar on the systems used for printing the final cinefluorographic records, by Kodak's Gordon A Chambers. Chambers explained how, in such work as medical study of the human throat, sound can be recorded simultaneously with the original negative exposure through use of a sync motor driving both the camera and recorder

• • •

**Postscripts:** Howard W. Hoadley, who directs photographic services at Marquardt Aircraft Co, Van Nuys, Calif., has been appointed editor of the quarterly *News Bulletin* of the Photographic Scientists and Engineers. Hoadley is a member of the Society's Southern California Chapter Council . . . Film production in Hollywood is scheduled to get into high gear this month with 19 films set to roll. This is a 90% hike over December when only ten pictures went before the camera. Last January, only 16 feature films were started. ■


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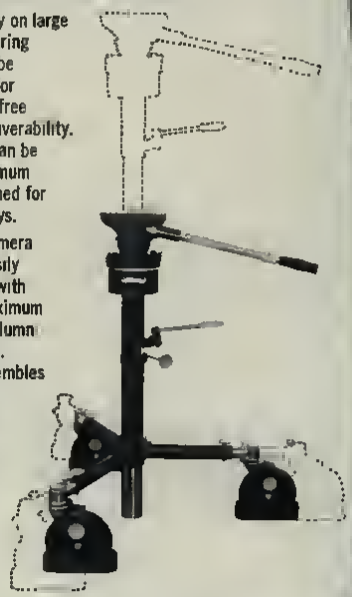

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# PHOTOGRAPHIC ASSIGNMENTS

**WHAT THE INDUSTRY'S CAMERAMEN WERE SHOOTING LAST MONTH**

ASTERISKS INDICATE TELEVISION FILMS

### ALLIED ARTISTS

CARL GUTHRIE, ASC, "Battle Flame" with Scott Brady and Jean Robbins. R. G Springsteen, director

### AMERICAN NATIONAL

CHARLES VAN ENGER, ASC, MONROE ASKINS, CURT FETTERS, "Highway Patrol"* (Ziv-TV) with Broderick Crawford.

BOB HOFFMAN, MONROE ASKINS, CURT FETTERS, "Rough Riders"* (Ziv-TV) with Kent Taylor.

MONROE ASKINS, "Law Enforcement"* (Ziv-TV, pilot). Bill Conrad, director.

CURT FETTERS, RICHARD RAWLINGS, "Bold Venture"* (Ziv-TV) with Dane Clark.

RICHARD RAWLINGS, CURT FETTERS, "Tombstone Territory"* (Ziv TV) with Pat Conway

MONROE ASKINS, CURT FETTERS, "MacKenzie's Raiders"* (Ziv-TV) with Richard Carlson.

### CALIFOENIA STUDIOS

STUART THOMPSON, ASC, "Have Gun Will Travel"* (Filmaster Prods.) with Richard Boone.

FLEET SOUTHCOTT, "Gunsmoke"* (Filmaster Prods.) with James Arness and Dennis Weaver

### CASCADE PICTUEES

ELWOOD BREDELL, ASC, Commercials*

ROY SEAWRIGHT, Commercials*

### COLUMBIA

BURNETT GUFFEY, ASC., "They Come to Cordura" (C'Scope & Color, Goetz Prods.; shooting in Utah) with Gary Cooper and Rita Hayworth. Robert Rossen, director

JOHN WILCOX, "The Mouse That Roared" (Highroad Prod.; shooting in England) with Jean Scberg and Peter Sellers Jack Arnold, director.

JAMES WONG HOWE, ASC, 'The Last Angry Man" (Fred Kohlmar Prod., shooting in N.Y.) with Paul Muni and Betsy Palmer. Daniel Mann, director

ERNIE DAY, "Idle on Parade" (C'Scope, Warwick Prod.; shooting in London) with William Beadix and Anne Aubrey. John Gilling, director

FRED GATELY, ASC, "Father Knows Best"* (Screen Gems) with Robert Young and Jane Wyatt. Peter Tewksbury, director.

GERT ANDERSON, ASC, "Donna Reed Show"* (Screen Gems) with Donna Reed Oscar Rudolph, director

IRVING LIPPMAN, "Behind Closed Doors"* (Screen Gems). John Peyser, director.

FRED JACKMAN, JR., "Ed Wynn Show"* (Screen Gems) with Ed Wynn Arthur Lubin, director.

FRANK CARSON, FRED JACKMAN, Ja., "Alcoa Goodyear Theatre"* (Screen Gems),

JACK ETRA, "Stake Out"* (Screen Gems, shooting in Fla.) Bernard Kowalski, director

FRANK CARSON, "Secret Bride of Candy Rock" with Lee Costello and Dorothy Provine. Sidney Miller, director

J. BURGI CONTNER, ASC, "Naked City"* (Screen Gems; Shelle Prods., shooting in N.Y.)

### WALT DISNEY

GORDON AVIL, ASC, "Zorro"* with Guy Williams

WILLIAM SNYDER, ASC, "John Slaughter"* with Tom Tryon and Robert Middleton. Henry Keller, director

LUCIEN BALLARD, ASC, "Ellego Baca"* with Robert Laggin and Robert Simon. Chris Nyby, director

### FILMCRAFT STUDIOS

VIRGIL MILLER, ASC, "You Bet Your Life"* with Groucho Marx Robert Dwan, director

### FOX WESTERN AVENUE

FRANK REDMAN, ASC, "The Perry Mason Show"* with Raymond Burr,

GEORGE DISKANT, ASC, "The Rifleman"* (Four Star Prods.) with Chuck Connors, "Dick Powell's Zane Grey Theatre"* (Four Star Prods.) with Dick Powell. John English, director, "Law Gun"* (Four Star Prods.) John English, director

GUY ROE, ASC, "Trackdown"* (Four Star Prods.) with Robert Culp, "Wanted Dead or Alive"* (Four Star Prods.) with Steve McQueen Bud Springsteen, director

PEVERELL MARLEY, ASC, Commercial*

CHARLES BURKE, "Black Saddle"* (Four Star Prods.) John English, director.

### GENERAL SEEVICE

JAMES VAN TREES, ASC, "The George Burns Show"* (McCadden Prods.) with George Burns Rod Amateau, director

HARRY WILD, ASC, "The Bob Cummings Show"* (Laurmac Prods.) with Bob Cummings and Rosemary DeCamp. Bob Cummings, director, Commercials*

NEAL BECKNER, "The Adventures of Ozzie & Harriet"* (Stage 5 Prods.) with the Nelsons Ozzie Nelson, director

ARCH DALZELL, "Flight"* (McCadden Prods.)

PERRY FINNERMAN, Commercial*

### GOLDWYN STUDIOS

NORBET BRODINE, ASC, "Loretta Young Show"* (Lewislor Prods.) with Loretta Young.

LEON SHAMROY, ASC, "Porgy and Bess" (Sam Goldwyn Prod. for Columbia) with Sidney Poitier and Dorothy Dandridge Otto Preminger, director.

### INDEPENDENT

TED PAHLE, ASC, "Ed Sullivan Show"* (CBS; shooting in Alaska) Robert Precht, director; "F" series* (CBS), Ted Post and David Alexander, directors

WILFRID CLINE, ASC, "Cast a Long Shadow" (Mirisch-Murphy for UA) with Audie Murphy and Bob Foulk. Thomas Carr, director

ERWIN HILLIER, "Shake Hands with the Devil" (Glass-Seltzer Prod., shooting in Ireland for UA) with James Cagney and Dana Wynters. Michael Anderson, director.

FRED YOUNG, "Solomon and Sheba" (Technicolor; Edw. Small Prod. for UA, shooting in Spain) with Yul Brynner and Gina Lollobrigida. King Vidor, director.

LEE GARMES, ASC, "The Big Fisherman" (Eastman color, R. V. Lee Prod for Buena Vista) with Howard Keel and Susan Kohner. Frank Borzage, director

FLOYD CROSBY, ASC, "The Wonderful Country" (C'Scope & Technicolor, MPL Prod. for UA; shooting in Mexico) with Robert Mitchum and Julie Londoa Robert Parish, director,

DESMOND DICKINSON, "Horrors of the Black Museum" (C'Scope & Color, American Int'l Picts.; shooting in England) with Michael Gough and Jane Cunningham. Arthur Crabtree, director.

WILLIAM CLOTHIER, "The Horse Soldiers" (Color, Mahin Rackin Mirisch for UA) with John Wayne and William Holden John Ford, director

MEREDITH M. NICHOLSON, "Dangerous Charter" (Panavision & Technicolor; Dangerous Charter Co.) with Dick Foote and Selly Frazer Robert Cottschalk, director.

MAURY GERTSMAN, ASC, "Four Skulls of Jonathan Drake" (Vogue Picts. for UA) with Edward Fraaz and Valerie French. Edward Cahn, director

WILLIAM DANIELS, ASC, "A Hole in the Head" (C'Scope and Color, Sinatra Prod for UA) with Frank Sinatra and Eleanor Parker. Frank Capra, director

ARTHUR ARLING, ASC, "Take a Giant Step" (Hecht-Hill-Lancaster for UA) with Johnny Nash and Estelle Hemsley Philip Leacock, director.

RUSSELL HARLAN, ASC, "Day of the Outlaw" (Security Picts. for UA) with Robert Ryan and Venetia Stevenson Andre de Toth, director.

### KEYWEST STUDIOS

WALTER STRENGE, ASC, Series of religious pictures (Family Films). William Claxton, director

### LINKLETTEE PLAYHOUSE

ALAN STENSVOLD, ASC, "People Are Funny"* (John Guedel Prods.) with Art Linkletter Irv Atkins, director

### McGOWAN PRODS

BRYDON BAKER, "Death Valley Days"* (McGowan Prods.)

**Continued on Page 16**

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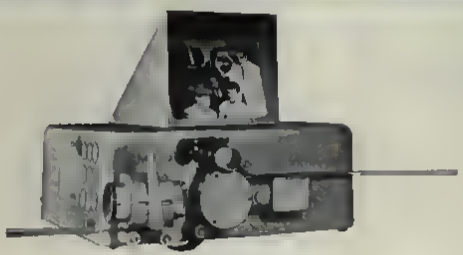

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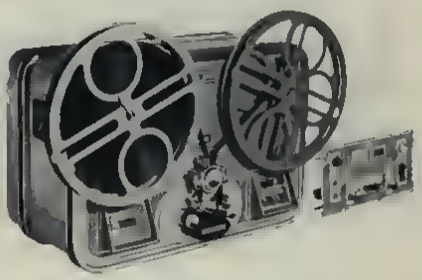

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## PHOTOGRAPHIC ASSIGNMENTS

Continued from Page 12

### METRO-GOLDWYN-MAYER

ROBERT SURTEES, ASC, "Ben-Hur" (shooting in Rome) with Charlton Heston and Jack Hawkins. William Wyler, director

ROBERT BURKS, ASC, "North by Northwest" with Cary Grant and Eva Marie Saint. Alfred Hitchcock, director

ROBERT BRONNER, ASC, "Ask Any Girl" (Metrocolor, Euterpe Prod.) with David Niven and Shirley MacLaine. Charles Walters, director

LESTER SHORR, ASC, "Col. Humphrey J. Flack"* (Jody Pan Prods.) with Alan Mowbray and Frank Jenks.

WILLIAM SPENCER, "The Thin Man"* with Peter Lawford and Phyllis Kirk

DALE DEVERMAN, "One Step Beyond"*, John Newland, director

### MOTION PICTURE CENTER

ROBERT PITTACK, ASC, "Ann Sothern Show"* (Desilu Prods.) with Ann Sothern.

ROBERT DE GRASSE, ASC, "Danny Thomas Show"* (Desilu Prods.) with Danny Thomas. Sheldon Leonard, director; "Love and Marriage"* (Desilu Prods.) Bob Sweeney, director.

LOTHROP WORTH, ASC, "The Real McCoy's"* (Brennen-Westgate Prods.) with Walter Brennan. Hy Averback, director.

CHARLES STRAUMER, "U.S. Marshal"* (Desilu Prods.) with John Bromfield. Herve Foster, director.

SID HICKOX, ASC, MAURY GERTSMAN, ASC, "December Bride"* (Desilu Prods.) with Spring Byington and Frances Rafferty. Frederick DeCordova, director.

MAURY GERTSMAN, ASC, "Red Skelton Show"* (Desilu Prods.) with Red Skelton. Seymour Berns, director.

LUCIEN ANDRIOT, ASC, "The Californians"* (Desilu Prods.) with Richard Coogan.

SID HICKOX, ASC, NICK MUSURACA, ASC, CARL GUTHRIE, ASC, "Westinghouse Desilu Playhouse"*

KENNETH PEACH, ASC, "Lassie"* (Jack Wrather Prods.) with Jane Lockhart and John Provost.

ROBERT HAUSER, "Derringer"* (Desilu Prods.) with Jack Mahoney, "Man With a Camera" (Desilu Prods.) with Charles Bronson. Richard Sale, director.

PAUL IVANO, "Grand Jury"* (Desilu Prods.) Alvin Ganzer and Sobey Martin, directors

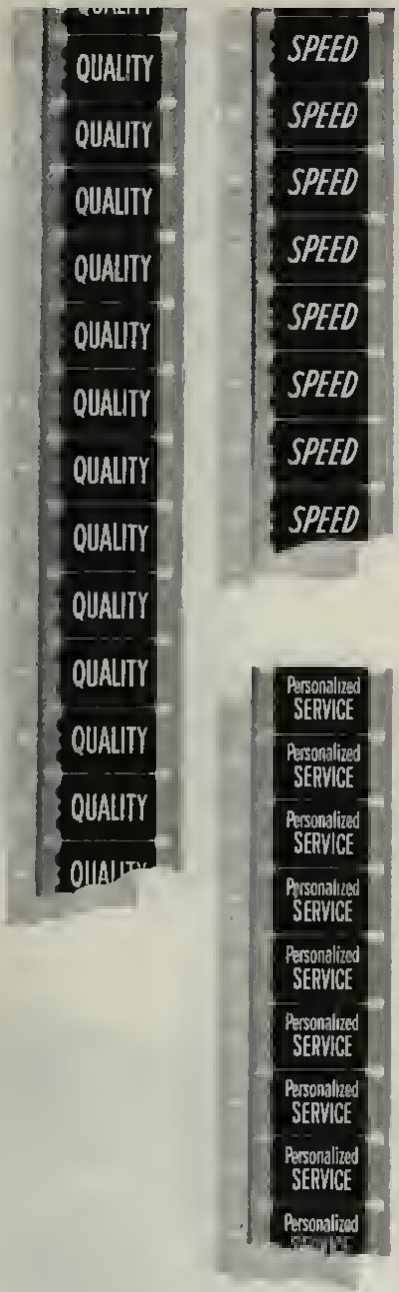
### PARAMOUNT

DANIEL FAPP, ASC, "The Five Pennies" (VistaVision & Technicolor. Dena Pictures) with Danny Kaye and Barbara Bel Geddes. Melville Shavelson, director

HASKELL BOGGS, "Don't Give up the Ship" (Hal B. Wallis) with Jerry Lewis and Dina Merrill. Norman Taurog, director.

CHARLES LANG, JR., ASC, "One-Eyed Jacks" (VistaVision & Color). Pennebaker Prods.) with Marlon Brando and Karl Malden. Marlon Brando, director

Continued on Page 62

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November 1, 1956

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All in all we have been very satisfied with the Dual Reader and expect that it will continue to be our basic editing tool.

I, unfortunately, do not have any photos of the unit in use. However, if you should want to come up to take some, you are welcome to do so. Of course you are also welcome to bring anyone up for a visit to see us at work as Paul did last week. Best regards, and I am sure the Dual Reader is well on its way to becoming the standard unit for the whole industry as it has been for us.

Sincerely yours,

Tak Kako
Film Director

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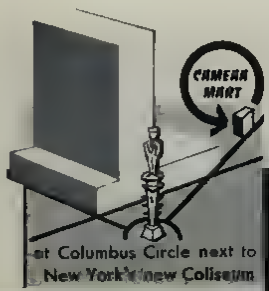


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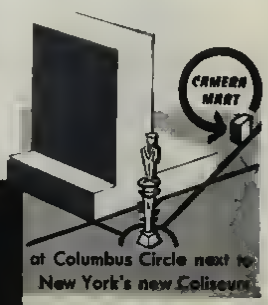


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# TECHNICAL QUESTIONS & ANSWERS

*Conducted by Walter Strenge, A.S.C.*

QUESTIONS relating to cinematography or other phases of film production are invited from readers and will be answered by letter by Walter Strenge or by other qualified members of the American Society of Cinematographers. Questions and answers considered of general interest will appear in this column.—*Ed.*

**Q What do studio special effects men add to ordinary water to make it appear like sea water? Also, how are ripple effects produced on a small scale for special effects and miniature shots? —V.E.S., Jersey City, N.J.**

*Answer:* A pool of clear water will reflect the color of the sky or of a sky-backing, thus it is unnecessary to use dyes for the purpose of coloring water for miniature sea shots. However, where shallow tanks or pools are used, the water must be dyed so the bottom will not show through. For this, No. 623 blue aniline dye powder is used—approximately one pound to 250,000 gallons of water.—*James B. Gordon, A.S.C. 20th Century-Fox Studio.*

**Q On numerous Burns & Allen TV shows, George Burns has appeared sitting in front of a television set watching a picture that shows action in another part of his home or a next-door neighbor's house. Please tell how this is done in TV camera work, what it is known as in photography, length of time used in motion pictures, etc.— J. R. H., White Plains, N.Y.**

*Answer:* The Burns & Allen shows, as you may or may not know, are on film. The method by which the effect described is accomplished is known as optical printing. The picture observed by George Burns on the TV screen was photographed separately, then optically reduced to exact size of the TV screen and printed in on the negative in the laboratory procedure that produces the prints. The method has been employed for many years in making motion pictures—both feature films and films for TV—both here and abroad.—*James Van Trees, A.S.C., McCadden Productions.*

**Q I have a Filmo 70-DA camera having a single-frame exposure release. What f/stop should be used for single-frame exposures with this camera, where normal exposure for same subject at 24 f.p.s. is f/8 with the same lighting?—J. J. L., Toronto, Canada.**

*Answer:* According to Bell & Howell, the exposure interval for single frames shot with the 70-DA camera is the same as when shooting at normal camera speeds. Therefore, in the instance described, you would set your lens at f/8.—*Ray Mercer, A.S.C.*

**Q I am planning to shoot scenes of a military parade in 16mm Kodachrome, and would like to superimpose a waving flag over the parade scenes in such a way that the marchers may be seen clearly through the flag. How can I do this?—M. S. T., Los Angeles, Calif.**

*Answer:* For a good, professional result, this is a job requiring the services of a film laboratory which can superimpose the flag over the parade shots in the right density. First make a shot of the waving flag of sufficient length to match the footage of the parade scenes; or this can be shot after the parade scenes have been filmed. Then submit all footage to a competent film laboratory with advice as to the result you want. The lab will edit the flag footage and the parade scenes for A & B rolls for special effects printing, and superimpose the flag footage over the parade footage in the printing operation.—*Lou Vincent, A.S.C. Associate.*

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| | 35mm, Complete with three lenses, tripod, hi-hat, matte box, case, three 200 ft. mags (Note: All Birns & Sawyer rental Arriflex cameras, 35mm, are the new IIB model with 180-degree shutter and heavy-duty motor.) | 15.00 | 60.00 |
| SOUND BLIMPS | 16mm, Complete with matte box, filter holder, extension eye-piece, trunk | 15.00 | 60.00 |
| | 35mm, Complete with matte box, filter holder, extension eye-piece, trunk | 15.00 | 60.00 |
| BARNEYS | 16mm, Covers camera, magazine, motor, matte box | 3.00 | 12.00 |
| | 35mm, Covers camera, magazine, sync motor, matte box (B & S barneys reduce camera noise 65% on 35 Arri, 80% on 16mm Arri. Only barney to utilize kapok, sheet lead foil, multiple foam layers.) | 3.00 | 12.00 |
| CAMERA HEATERS | 16mm or 35mm Birns & Sawyer barneys with built-in 115v A.C. heater pads thermostatically controlled to ±15°F. in an ambient of —65°F. | 5.00 | 20.00 |
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| LENSES, ZOOM | 16mm, Pan Cinor "70" | 10.00 | 40.00 |
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| | 16mm, 5.7mm F1.6 Kinoptik (113°). | 10.00 | 40.00 |
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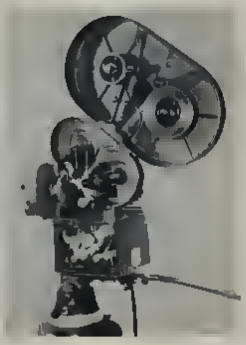

**SOUND RECORDING UNIT FOR ARRI-16** Camera Equipment Co., New York, N. Y., has been appointed exclusive U. S. distributor for the Gaumont-Kalee Model 1690 magnetic sound recording unit for the Arriflex "16" camera. Transistorized sound recorder is attached to base of camera, between camera and tripod. 16mm soundstriped film is used which is pulled through the sound head by the take-up and hold-back-sprocket of the camera. No other mechanical drive is required. Amplifier case, which also includes battery, may be carried by means of shoulder-strap by the cameraman-operator. Camera and amplifier may be operated close together or up to 60 feet apart. Microphones can be satisfactorily used up to 120 feet from camera, or as near amplifier as 4½-ft.

**RAPID 35MM FILM PROCESSOR** "Mini-Rapid 35" processes 35mm film automatically, operates at speeds up to 6 ft. per minute. Four hundred feet of leaderless film can be processed at one loading. Unit is designed to operate under daylight conditions and use any size film spool. Heart of unit is patented plastic drive insert in each solution tank which transports film and at same time provides solution agitation and squeegee action. Net weight is 120 lbs. Size: 15" deep, 13" high, 37" wide. Further data and prices: Fairchild Camera and Instrument Corp., Syosset, L. I. New York.

**MAKRO-KILAR LENSES FOR ARRIFLEX** New Kilfitt Makro-Kilar lenses for 16mm and 35mm Arriflex camera permit continuous focusing from infinity to 4-in. without need for extension tubes. The 40mm f/2.8 Makro Kilar A in Arri mount fills film frame with subject-areas as small as 19/32"x⅞" with an Arriflex 16, 1¼"x1¾" with the Arriflex 35. Extra long helical mount permits covering the extreme focusing range, affording long, medium and closeup shots without changing lenses. F/ stops from 2.8 to 22 may be pre-set to permit focusing with lens wide open. List price is $195.00. Lens is available only through franchised Arri dealers.

**RECORDING EQUIPMENT CATALOG** Write Stancil Hoffman Corp., 921 No. Highland, Hollywood 38, Calif. for company's new "short form" catalog of magnetic tape and film recording equipment in both transistor and tube type circuitry.

**ANIMATION ACCESSORIES.** Animation Equipment Corp., 38 Hudson St., New Rochelle, N. Y., offers a range of companion equipment and accessories for animated film production totaling eleven units, including cel punch boards (illustrated), two 22"x17" planning cel tables, three drawing boards, various peg bars and pegs. Type 93 table has two rules, hand crank controls with counters, hole through center, and two sets of Oxberry pegs, or pegs of customer's selection. Type 92 drawing board is aluminum disc 17-3/16" in diameter, includes two moving peg bars with locks, and two sets of pegs. Illustrated descriptive material and prices may be had by writing company direct. ■

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The CALVIN Company, Konsos City, is one of the most unique ond respected firms in Americon cinematogrophy.

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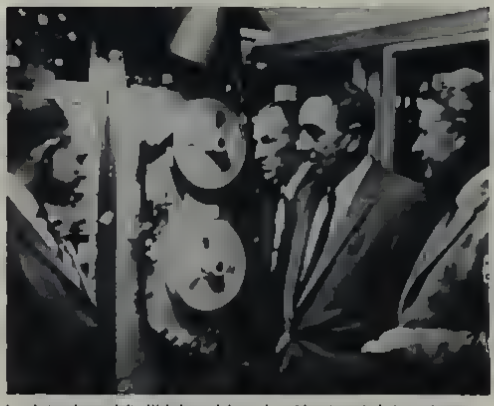
# HOLLYWOOD BULLETIN BOARD

*News and pictures of the A.S.C., its members, and important industry personalities*

CONTINUING STUDY OF video tape, begun two months ago, members of ASC last month gathered at NBC's color TV studios in Burbank, Calif., to study equipment and procedures for video tape recording and transmission of color. Necic were Dick Welsch, NBC's Dir. of TV Network Pcudn. and Business Affairs and Fouton Coo, Dir. of Film Production, assisted by othec engineers



In phuto above left: Welsch explains color video tape techniques to assembled ASC members. Seated, rear, are (L to R) Jack Kennedy, NBC Staff Engineer and Occer Wick, manager of NBC's vid-tape opecations. In opposite photo, Wick (L) explains vid-tape playback machine to ASC owmbers John Fulton, Wm. E. Gephart, and Arthur Arling

ASC PRESIDENT Weltec Strenge (5th from left) and Arthuc Miller, ASC (2nd from left) recently assisted members of the Southern California Accsiation of Amateur Movie Clubs in judging the Associaticn's annual contest films at the ASC clubhouse. Others on judging panel were (from left) Warren Nash, President of SCAAMC; Herner O'Donnel, California International Productions; Harry Coswick, ACE, Editor of 'Gunsmoke' TV film series; Danny Plumlee, editor and publishec of 'Movie Photographec' magazine; Deane Harrison, Valley 8mm Club; and Ronald Parks, President-elect of Valley 8mm Club

ALAN STENSVOLD, ASC, directed the photography of Bob Hope's 1958 Show for the U.S. Armed Forces in Europe, an assignment that took him to the Azores, Spain, Africa, Italy, France, Germany, and Iceland. For the job he brought a long six Mitchell cameras and two crews of Hollywood technicians who shot a total of 100 shows in 12 days. Bust of footage is to be presented on U.S. television by Hope sometime in January

IRVING RIES, ASC (left), and Elmec Dyec, ASC, study the Society's Roster of Members and reminisce on good old days of making movies in Hollywood. Dyec is veteran who began carees at old Metro studio later went to MGM, following merger, where he cubsequently headed that studio's department of special optical effects. He has since retired and is now a manufacturer of tripods and othec photographic equipment. Dyer is still an active cameraman

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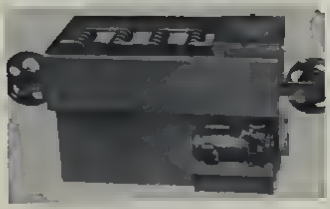

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| **Model TG, II, 16mm** | **$175** |
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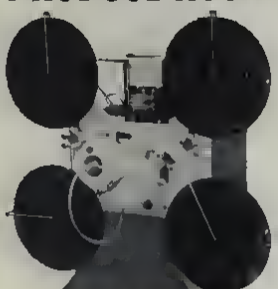
## PRODUCE ROCK-STEADY PRINTS with TEL-Amatic PRINTER



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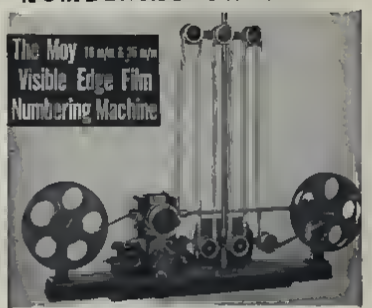


Simplifies task of checking titles footage. Replaces cue marks perforations messy crayons punches embossing etc., which mutilate film. Work prints showing special effects fades and dissolves require edge numbering to keep count of frames cut or added. Multiple magnetic tracks in CinemaScope stereophonic recordings make edge numbering a MUST

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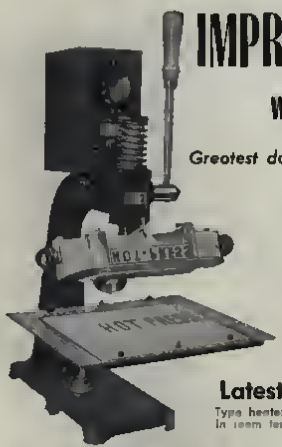


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The first sensibly priced **HOT PRESS TITLE MACHINE** for high quality, fast dry lettering in all colors—the answer to economy and precision accuracy in film titling. Prints dry from foil for instant use. Acme pegs assure perfect registration on paper or acetate cells. Produces titles in any language — main titles, sub titles, TV commercials, slide films, shadow, third dimensional effects, etc., etc. May be applied to any kind of art, scenic or live background, including photographs.

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Type heated at constant rate automatically* despite changes in room temperatures. Accuracy ± 1° F by Thermister **$495**

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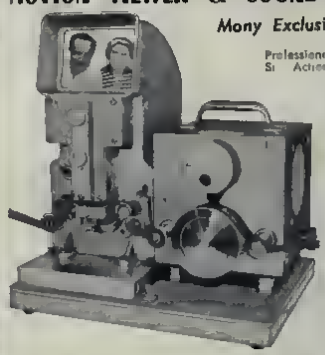

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Bell & Howell 2709, Unit 1 movement, like new 1985 00
Bell & Howell 2709 w/rackover, near new 2450.00
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Bell & Howell Eyemo Q w/spider turret, open back, motor mount, 3 lenses 295 00
Bell & Howell single lens Eyemo w/lens, quickwind and case 119 50
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## 16MM CAMERAS

Maurer, 0-5, w/two 0-1 magazines, 12-volt DC motor and two carrying cases $2450.00
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Kodak 16mm aloc single-frame P/anim or time study 145.00
Kodak high-speed, 3500 pix per second 975.00
B & H Filmo, 70 DA w/3 lenses 225.00
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Bell & Howell Filmo 70, w/spider turret & 3 lenses 169 50
Siemens magazine, f 3.5 Tessar lens 69.50
Auricon Pro-600, like new, EIF-20 finder & door, turret & 3 lenses, TVT shutter, critical focuser, lens & turret blimping head, Galva, 2 mags, mike, amplifier, tripod, trunk, etc. Cost new $5100 00 3575.00

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Bell & Howell 400', metal 57.50
Bell & Howel 1000', new 95 00
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Akeley 200' 14.50
Arriflex 200' (conversion) 62.50
Cameraflex 200' 28.50
Cineflex 200' 19.50
Cunningham 200', w/pin movement 225 00

## 16MM, 35MM MAGAZINES

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16mm x 50' empty magazines, ten for 4 10

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Maurer animation motors 295 00
B&H 2709, prof studio camera motors 350 00
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Acme animation motor, 110-V 295 00
Well 12-V & 24-V 125 00
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Bell & Howell Filmo tripod 27 50
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Mitchell erect-image finders, w/ded matte 245 00
Mitchell comb matte box & sunshade 185 00
Mitchell enlarging adapters, new 47 50
Mitchell variable diffusers, new 135 00
Auricon EIF-20 viewfinders 125 00
Polaroid variable filter, 3" diam. 10.00
Heated covers, GE, F/Mitchell, etc. 25 00
Well comb matte box & sunshade 185 00
Auricon 12-volt battery, new, list $58 00 38 50
Bell & Howell rackovers—Eyemo 29 50
Bell & Howell rackovers—Filmo 23 50
Handle & strap to hand hold camera 1 65
Case for Eyemo Q 19.95
Case for Cine Special—100' 29 50
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Baby Stedie Blimp for Mitchell standard or Mitchell HC w/sound, $1500 00 value 895 00
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## SOUND RECORDING EQUIPMENT

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Auricon power supplies 125 00
Auricon Cinevoice amplifier w/case 135 00
Carter converter 12-V to 110-V 75.00
Auricon AT-80, 16mm recorders 275 00
Auricon NB-22 amplifiers 125 00
Auricon NB-24 amplifiers 165 00
Auricon mike boom 115 00
Cine-Pre recording amplifier, model A 285 00

## LIGHTING EQUIPMENT

Fresse-Lites with/case, charger, reflector, bracket portable hi-intensity lites for news, TV $ 75 00
Bardwell studio stand, holds 3 lights, extends 15' (cost $184.00) 29 50
Olsen Creco, 2000-W incand 18" spot, less lens 28.50
Cinolite, portable, hi-intens flood for TV, news, new 275 00
Dormitzer, portable, hi-intens flood for TV, news, new 275 00
Calartron Kit w/converter 2 broads, 2 spots, access & case 199 50
Century Lekolite, 2000-W Arc, w/snoot 79.50
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Ampro 16mm, Strong arc, stand, ampli&er, recti&er, speaker 875.00
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Bell & Howell 16mm Filmosounds 195.00
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DeVry 35mm outfit, Inc. 2 proj. w/ lens, lamps, cables, mags, ampli&er & speaker, like new 825.00
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Many other 16 & 35 projectors in stock. Please advise us of your needs.

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Herefeld sensitester, like new 495.00
Art &eeves sensitester 275.00
Stineman 16mm or 35mm, 200' collepsible drying racks, new 7.50
Morse M-30, 16 or 35 x 50' dryer 19.50
Eastman 35mm film numbering machine model B-35. Appmx cost $3,000.00 1650.00

## FILM PROCESSING MACHINES

DeBrie Aiglenne 35mm, needs complete overhaul and some parts $ 250.00
Morse G-3 8mm, 16mm or 35mm x 100' daylight pmcessor 29.95
Camera Equip Co 35mm test strip developer, adapts to Mitch or B&H mags 59.50
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Houston K-1A (similar to Model 11) 16mm 1295.00
Houston Model 118, 16mm neg-pos-reversal list $6250.00 2850.00
Houston Model 10, 35mm, needs overhaul, $13,000.00 value 1750.00
Houston Model 10C, 35mm, list $16,500.00 3250.00
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Houston 16mm Ansco color machine 5950.00
Houston model 10CS 16/35 neg, pos, reversal, list $16,000.00 4950.00
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Micm Record 16 & 35 elec daylight 165.00
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Petco 16, 35 & 70 machine 175.00
Stineman 70mm pmcessors 175.00

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Arri 35mm late (list $9000.00) w/ punch-tape light control, like new $1950.00
Arri optical induction printer, 35mm to 16mm 1250.00
Hemfeld 16mm printer, new 950.00
Herefeld 35mm printer, new 950.00
Schustik 35mm printer 750.00
Stinemen 35mm printers, elec driven 85.00
Stinemen 16mm printers, elec driven 95.00
Houston 16mm printer, new 395.00
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Burchell 35mm continuous 135.00
Hemfeld optical sound 16mm printer, new, model 1517A, list $1522.00 975.00

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Neumade stripping &anges, non-magnetic $ 3.75
Synchmnizer, Moviola SYS, two 35mm spmckets 95.00
Synchmnisers, Moviola SYD, four 35mm sprockets 145.00
Griswold splicer, 35mm S-2 14.95
Griswold splicer, 35mm "T", new 26.50
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Moviola differential rewinds 85.00
Neumade 35mm Slm waxers, new 24.50
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Bell & Howell 16mm editers, incl. viewer, splicer & mwinds, list $155.00 89.50
MPE 35mm splicers 12.50
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Presto 16mm hot splicer 269.50

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Moviola UCS, 35mm pic head & 35mm sound $ 545.00
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Moviola Model D, 35mm 189.00
Moviola Model O, 35mm, new, orig factory boxes 289.50
Moviola Model ULPV35, 16mm, new, factory skid, $3800.00 value 2495.00

## MISCELLANEOUS

SEI light meter (list $170.00) $ 125.00
Mole-Richardson mike perembulators 275.00
Jenette converters, 12-V DC—110-V AC 85.00
Black-&-white mversal chemical kits, 4½ gallon size, complete 14.95
Changing bags, 32x34", double wall 9.95
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New 16mm Neumade rewinds, 1 gear, 1 dummy end w/2 gear ends 9.50 17.50

## ANIMATION STANDS

National Cine Equipment animation stands (list $16,000.00) 3500.00

## MOVEMENTS

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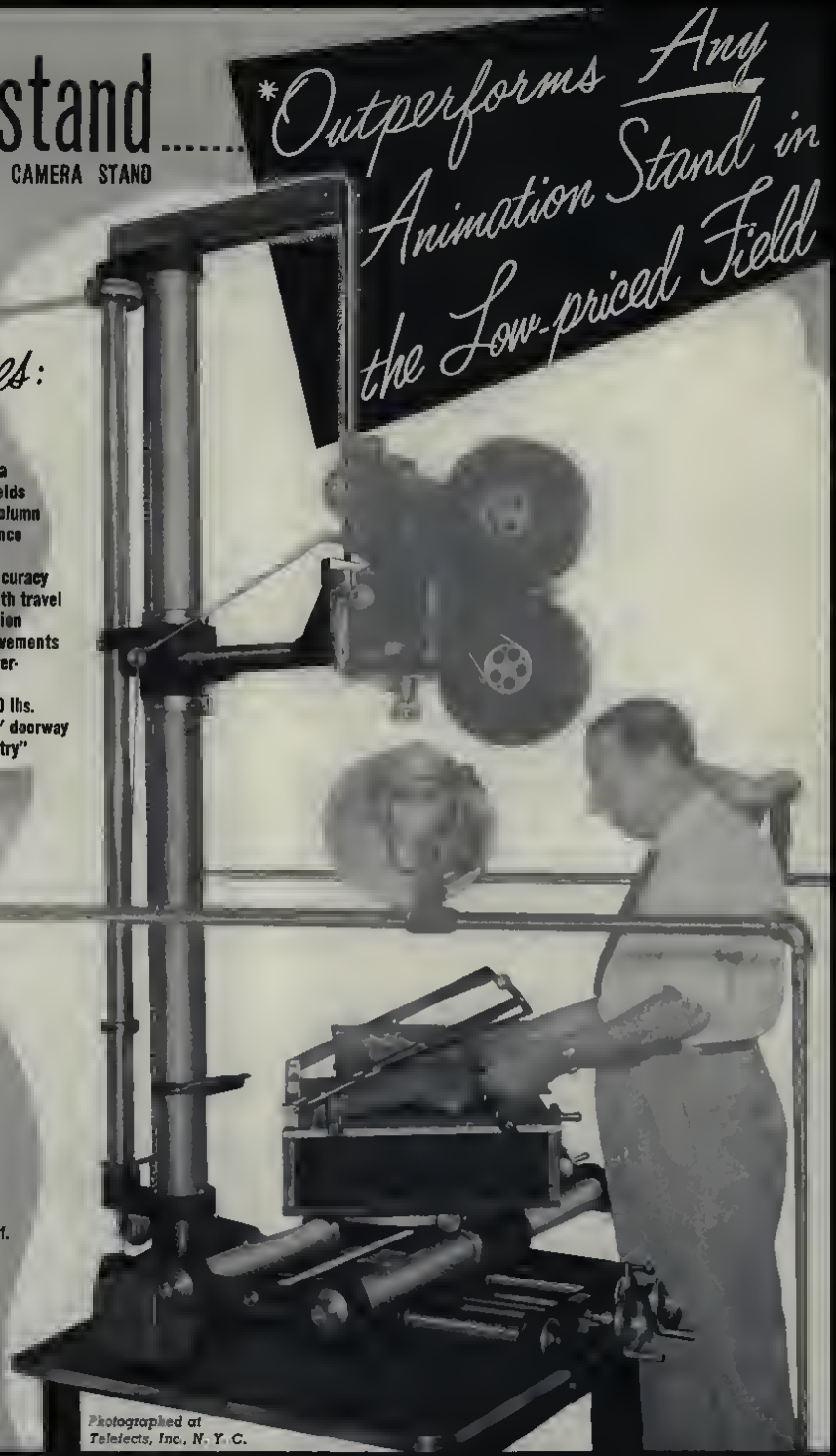

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FROM THE DESK OF THE EDITOR

## Looking Back on '58

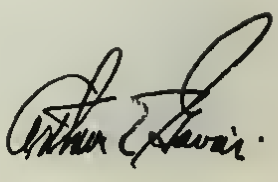
A traditional editorial procedure each January is to evaluate achievements of the preceding year. Technically, nothing of great importance was developed by the motion picture industry during 1958. The continuing decline in theatre attendance having become the major problem, studio efforts were solidly concerned with shoring up its ailing boxoffice with bigger, better and costlier productions.

The process of evolution, which is affecting this industry as it does everything else, seems accelerated and is everywhere evident. And while "the movies" are not likely to disappear in the foreseeable future as one of our chief sources of entertainment, film production today is a vastly different business than it was ten years ago. Today big-budget production is the only profitable production and it will continue to be the industry's mainstay as long as our economy will support the $2 and $3 boxoffice admissions necessary for today's profitable operation.

Fortunately, production of television films—still an "iffy" business—has absorbed the surplus of cinematographers that diminishing feature film production has made available. (Hollywood reportedly turned out only 225 features in 1958, compared to about 325 in 1957). But this was a lucky break for TV film producers, a break which made available to them the world's best cinematographic talent. Result is most video film producers are turning out programs for home TV having all the pictorial quality movie-goers have become accustomed to—and certainly would have missed had the industry's experienced cameramen not been available to photograph television's film programs.

But it is to Pay TV that the cinematographers look forward hopefully —as do others in the industry. Some of the most discerning see Pay TV not only the inevitable evolution of the television medium, but capable of developing a Hollywood motion picture industry of far greater magnitude than ever was believed possible under the old order of making films for theatre exhibition.

Hollywood's directors of photography are in no hurry to hang up their viewers and exposure meters and "buy a little chicken ranch in the valley" to support them in their autumn years. They know the big boom Pay TV will unleash is just waiting for some bold and courageous person, or event or circumstance to touch it off.



CAMERA NO. 2 moves in for two shot for "Night Court" under the direction of cinematographer William F. Whitley, ASC (in dark shirt). No. 3 camera may be seen in background focused on Judge (Jay Jostyn)

# FILMING COURTROOM DRAMAS FOR TELEVISION

Format used for "Night Court" may be film's answer to video tape

TYPICAL SCENE in Benner Productions' Night Court in which Japanese war bride with problem pleads case before Judge Jostyn, following procedural preliminaries by Public Defender Barney Biro

By JOSEPH V. MASCELLI

"NIGHT COURT," the comparatively recent and highly successful TV film series produced in Hollywood by Banner Productions, dramatically demonstrates what can be accomplished with a television film series when veterans having both motion picture and television experience merge their talents.

While almost everything that is done in producing "Night Court" has been done before, in part, the successful combination of the various elements that go into filming a television show have never before been so perfectly coordinated. Actors attribute the show's success to astute casting of many unknowns plus the superb performance of Jay Jostyn as the judge. Technicians credit the superlative camera-work. Live television technicians cite the show's free-flowing movement—the genuine "live" quality of the show. And vast numbers from television's nightly audience have extolled the shows' "believability," "It seems so real," many have said, "it must be filmed in a real courtroom during actual litigations."

The average producer of a TV film series—whether employing the single-take "stop-and-go," or the multiple-camera filming technique—usually completes two to three half-hour shows per five-day week. Banner Productions, in a recent ten-day stretch, completed fifty-six. For this, more than a half-million feet of negative was exposed at a ratio of only three-to-one compared to the four- or five-to-one presently standard for TV film shows.

"Night Court's" production formula may be film's answer to TV's video tape. Conservatively, it cuts costs in half without sacrificing technical quality or dramatic impact. No corners are cut except waste motion; no speed-up is ever employed. The fast shooting pace is achieved through careful, detailed pre-planning instead of by putting the heat on everyone during shooting. As production supervisor

VIEW FROM courtroom toward production staff showing No. 1 and 2 cameras lining up scene from different angles. Both cameras are mobile mounted and their moves are directed via intercom, according to requirements of script, by Producer-Director Sandy Spillman (in white shirt, left of center).

Jesse Corallo so aptly put it: "Repetitious rehearsals stagnate both actors and crew. The success of 'Night Court' is the result of planning that enables most action to be filmed in a single take, when everyone is at their peak of performance and not exhausted from long sequences of retakes on overtime."

The speed, efficiency and perfection with which "Night Court" is photographed has amazed not only veteran technicians, directors and actors, but the very camera crew that films it. Says Cinematographer William F. Whitley, A.S.C., who directs the show's photography: "The pace we are able to maintain using this method is remarkable." The five half-hour shows, which his crew photographs daily, using three cameras shooting simultaneously from three different positions, consume between 50,000 and 55,000 feet of negative.

Three Mitchell BNC cameras are used to film each show. (See diagram). Camera No. 1, employing a 3-inch lens, moves in and out on a crab dolly to photograph the judge and bailiff as each case is called, and subsequently films closeups of the judge as he presides. Camera No. 2, mounted on a Chapman crane, uses a 35mm lens to cover the courtroom audience and to follow defendants as they are brought in. This camera continues shooting a side angle of the proceedings—with a variety of camera movement—to record two-shots of judge and defendant, group shots of bailiff, public defender and others, or moves in for a closeup of the defendant. Camera No. 2 is actually the master scene camera—the "work horse" of the show. Camera No. 3, utilizing a Pan-Cinor lens, is mounted high behind and to the left of the judge and covers the defendant as he is brought up to the bench to testify.

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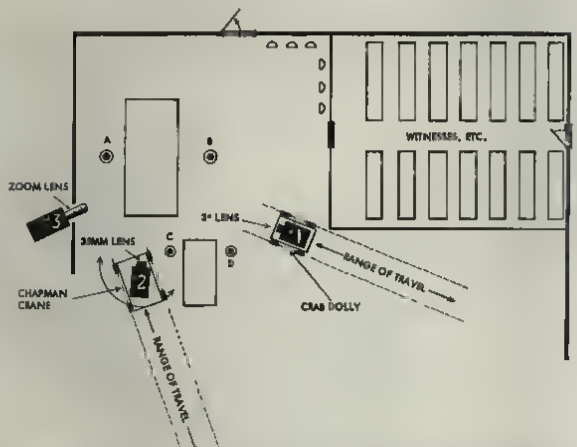


DIAGRAM OF SET FOR "Night Court" showing positions of the three Mitchell BNC cameras used in filming the show. Judge sits at A, Defendant is at B, while Bailiff (C) and Public Defender (D) sit at desk opposite camera No. 2.

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# Do-It-Yourself Sound Recording

**PART III**

**Don't stint when it comes to purchosing o microphone. The best is essential to top-quolity recording results.**

By ALLEN JACOBS
*The Calvin Co., Inc., Kansas City, Mo*

ONE OF THE ADVANTAGES of using o high-input microphone is that the greater volume of sound it delivers permits "backing up" the volume control on the recorder; less gain is used with consequent reduction in the level of extraneous or unwanted sound.

LAST MONTH we discussed here, for the edification of the small independent film producer wishing to set up his own sound recording department, the pros and cons of the various types of magnetic sound recorders, and listed the basic specifications essential to a magnetic tape or film recorder that is expected to produce professional quality sound. On the basis of that discussion, we can assume that a choice has been made and we now have a recorder.

It might further be assumed that this choice would be the hardest one to make, in planning a sound department, and that with the acquisition of the recorder most of the major problems automatically are solved. Unfortunately this is not the case. While the recorder is a very important and basic piece of equipment, a good magnetic recording machine does not in itself automatically guarantee the production of good sound. Still other factors are involved.

One simple proof of this could be observed were you to transfer or re-record, using your magnetic recorder, a fine-quality wide-range disc recording of an orchestration to magnetic tape, and then compare the quality obtained with that of a live recording of a really fine orchestra. Assuming that the orchestra whose music on the commercial disc you re-recorded and the orchestra whose music you recorded "live" were comparable, the results obtained in the two recordings might well be quite different.

Why? Well, if you did a reasonably careful and proper job of transferring the disc recording to tape, it probably would be difficult for you to detect any difference between the magnetic copy you made and the disc itself when both are played on good reproducers. However, the music that you heard played by the live orchestra, and the music that you recorded of that live orchestra would probably differ in quality. In the case of the disc recording, your assignment was a simple transfer of sound. The people who had made the commercial disc recording had already solved a lot of problems—choice and position of microphone, acoustics, equalization of the sound, and so on. However, when you prepared to record the live orchestra these were problems which *you* had to face and solve. And, unless you are a thoroughly experienced recording man, you would probably get something other than the finest results. We might say that the point is: the recorder may be better than you are. To put it another way, the recording machine generally has a greater ability to record sound than the operator's ability to feed quality-sound into it.

What are some of the other factors involved in sound recording? Well, there's the auxiliary equipment—microphone, pre-amplifier, cables, mixer, power supply, and so on. Then there's the matter of acoustics—what happens to the sound before it's picked up by the microphone. And there are some further subtleties of sound recording, the mastery of which is es-

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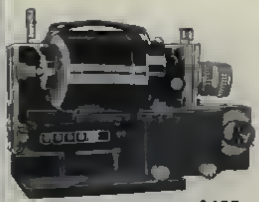

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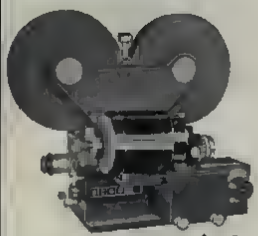

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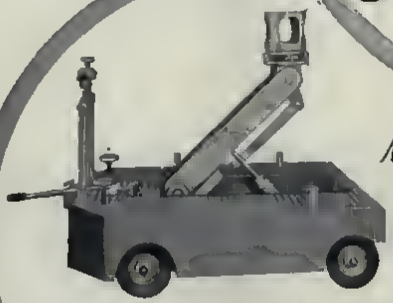

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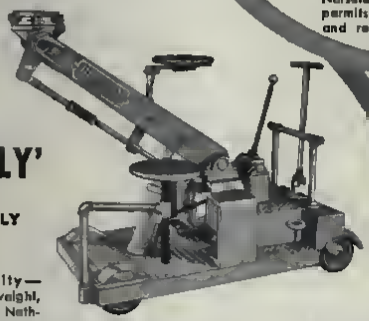

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WRITE FOR CATALOG

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FIG. 1—ABOVE SERIES of drawings represent "cleaned up" extremes and comprise 1 foot plus 12 frames of action for Walt Disney's "Bambi," expanded from the six roughs illustrated in October. Drawing 49 was shot in "2s," hence the duplication

# ANIMATED FILM TECHNIQUES

PART VI

## Cleaning up and in-betweening the animator's "extremes" precede the inking and painting steps

IN THIS CHAPTER we shall continue where we left off last month in describing the function of the "in-betweener" in the long series of steps of preparing the art work for a typical animated cartoon — in this instance, Walt Disney's "Bambi," which has been chosen for reference because it is probably one of the best remembered of all Disney feature-length animated films.

The first drawings that are cleaned up are the original extremes of the animator; so the key action poses become the key cleanups as well. This drawing chore is handled by the animator's assistant, for it is a very important phase in the procedure of animation. The assistant works closely with the animator at all times and is familiar with his way of working. It is the cleanup-man who puts the final "screen drawing" into the character.

After the extremes are cleaned up, the supplementary poses, or inbetweens, are taken care of by an "inbetweener", who is the humblest in the long string of artists on the production line. But even the inbetweener must have better-than-average facility with a pencil and possess a good sense of action.

Every inbetween is a complete drawing, just as finished as the extremes. It can be seen by examining the illustrations on this page that these inbetweens do not represent any important phase in the course of the action, but simply carry one extreme to the next. The extremes are indicated with an 'x' over the drawing-number. It doesn't make any difference how drawings are numbered, as long as they are in succession and the same number isn't used for two drawings in the scene.

An inbetween drawing is made in the following general fashion. Referring to the drawings in Fig. 1, it will be noted that drawings 71 and 73 are extremes. Number 72 is an inbetween. The inbetweener first places 71 and 73 on the pegs of his drawing board in superposition, snaps on the light under the glass in the board, puts a clean sheet of paper on top of the other drawings and numbers it 72. He then flips the two finished extremes back and forth to get an idea of the path of action. Unless otherwise indicated, the inbetween will be at a halfway position between each extreme. For example, it will be noted that the spots on Bambi's back are visible in drawing 73, whereas in 71 they are hidden by the position of his body. Hence, in 72, the inbetweener drew the character so that the spots are just beginning to come into view to the extent of half the amount that's shown in 73.

The inbetweener must be careful to draw everything that's indicated in the cleaned up extremes. If he overlooks a wrinkle, a spot or a color indication, the lack of such will cause a momentary flicker on the screen. When a drawing reaches the stage of being traced onto celluloid, the inker will ink only such lines as are on the drawing. If something's missing, if only for a

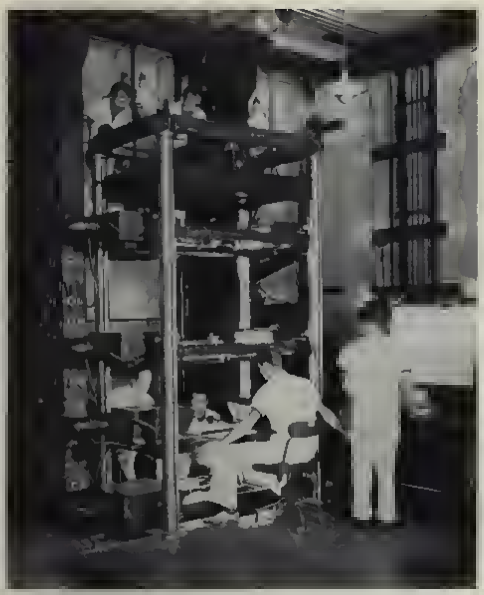

FIG. 2—THE MULTIPLANE animation camera stand, designed by Walt Disney Studios, made possible the remarkable 3-dimensional effects in "Bambi" and other Disney animated feature films. The horizontal units take various background and action cells and each may be positioned at various distances from the camera mounted at top of the multiplane unit

drawing or two, the inker will automatically leave it out, assuming the cleanup-man wanted it that way.

The inbetweener has the rough inbetween to guide him in placing his finished drawing in the proper relationship to the extremes. These rough inbetweens are done for the first rough test of the action. They help the inbetweener especially when the extremes are far apart, and he is obliged to provide several consecutive drawings instead of just one, as in the case of drawings 63, 65, 67 and 69 which are the inbetweens of the extremes numbered 61 and 71.

Various tricks and time-savers are employed in the drawing of cleanups and inbetweens. There is the "held cell"—used when some portion of a character's body is to remain stationary for 16 frames or longer, while the rest of the body is in action. Instead of re-drawing the motionless portion over and over again, it's drawn just once, and placed on a separate cell level. The active parts are animated on another level and superimposed over the held cell, in register. The only possible disadvantage to this method is the fact that the held part generally undergoes a slight change of color, or "color jump", when suddenly transferred to another cell level, as explained last month. Also, holding a held cell for too long a period is liable to present a "frozen" appearance to the stationary part.

Another drawing-saver is the "traceback". This is first cousin to the held cell, and is used when but a small portion of a character remains in the same size and position for a few frames. For example, if a character's feet are to remain in one spot for several drawings, while the rest of the character moves, the animator will animate his action as usual, but will fail to draw the feet each time, indicating for them to be traced from the drawing where they went into their held position. The cleanup-man and inbetweener will make their drawings complete except for the feet, calling for a traceback of the feet from the last drawing whereon they appeared.

The traceback is also used to save unnecessary drawing in the case of a cycle of action such as a walk, where the same pattern occurs over and over again. Sometimes, in a cycle, the same drawings are shot repeatedly for the length of the action, but where some part of the character undergoes changes of position while other parts are in a cycle action, the traceback is employed. A typical example is a scene from one Donald Duck cartoon. Donald is marching along on a parade ground, meanwhile watching a number of airplanes zooming along overhead. His feet and body go through a cycle of continuous action, but his head moves around, watching the planes. Here the animator drew a complete walk cycle to animate each foot completing a stride. Then, instead of re-animating these steps for each new stride, the animator indicated these original drawings were to be used, via tracebacks, and in the right order, again and again as long as the walking action continued.

New animation was done for the head, which changed position constantly during the walk, and which was registered to the tracebacks. The use of held cells, tracebacks and other such shortcuts are encouraged in the professional studios, because every unnecessary drawing is a waste of money, time, and effort.

If there's a portion of the background which a character goes behind during the action, the character is "registered to the background" during the process of cleaning up the drawings. The exact edge of this part of the background is carefully indicated by the layout-man, and the cleanup-man uses this guide in drawing only that portion of the character which is supposed to be in sight. Similar guides are provided the inker and painter. If the part of the background is of such a nature as to require complicated registering, such as a wire fence, clump of bushes, etc., it can be handled as an overlay, and placed on a top cell level.

When the action calls for a character to move outside of the limits of a 5 or 6½ field setup, a panorama or "pan" move is indicated. A pan move gives the effect of the camera dollying along beside a character in action, the same as in live-action photography. For this the background is drawn on a longer sheet of paper according to the amount of ground the character must cover. The cartoon camera is in more or less a fixed position at all times, and its movements are limited to the areas of the 5 or 6½ field. So, when the camera can't move, the background must. In the average pan move, the character animates in one spot on the setup, while the background is moved behind him in the opposite direction at a fraction of an inch per exposure, de-

Continued on Page 58

# Importance Of Variable Shutter

**Adjustable shutter gives cinematographer still-camera flexibility in exposure control to "stop" fast action or to maintain exposure levels under variable light conditions**

By JOHN FORBES

THERE ARE FEW FIELDS of professional motion picture photography that do not require, at some time or other, the advantages of the variable shutter. There are two principal uses for the variable shutter: (1) to make fades or lap-dissolves in the camera, and (2) to alter the exposure time interval.

The conventional motion picture camera shutter of this type is a two- or three-segment disc, the segments of which can be adjusted to alter the size of the shutter opening. As in still photography, the "faster" the shutter speed the better the camera is able to "stop" fast action without the blurring that would result in the image where a slower shutter speed is used.

Except for the Kodak 16mm Cine-Special, until recently the variable shutter was found only in professional 35mm motion picture cameras such as the Mitchell. Today, the importance of the variable shutter in both professional and non-professional cinematography has been fully recognized and we now find an increasing number of 16mm cameras offering this feature. Nor has the 8mm movie maker been neglected. Bolex, in its Model B-8VS cine camera, features a variable disc shutter that enables this camera to do anything its 16mm contemporaries can do with this feature

To describe briefly the functions of the motion picture camera shutter, when we expose a frame of film, the film is held motionless in the gate of the camera for a fraction of a second Before the next frame can be exposed, the film must be advanced in the gate in order to bring an unexposed frame in place for the next exposure. During this

ONLY WITH A VARIABLE shutter is it possible to shoot fast action moving across the camera field and get a crisp, blurr less image, as in the picture below

"STOPPING" HORSE in mid-air was simply a matter of closing down the shutter opening for a "faster" shutter speed and opening up the lens diaphragm to equalize the exposure

advance of the film. the light coming through the lens must he cut off momentarily, and this is effected hy the shutter. In most 16mm cameras the shutter is of the rotary disc type. Part of the disc is cut away to permit the passage of light to the film for the exposure. The disc shutter rotates continuously as the camera is operated.

Ohviously, the larger the opening of the shutter, the more light reaches each frame of film and oonsequeotly the greater is the period of exposure. But there are some definitely limiting factors. Most important of these is the mechanical problem of moving the film. During the period between the exposure of two successive frames (that is, the time period during which the shutter is "closed"), the film must be started, moved, then stopped dead. Clearly, if the open part of the shutter is large, the film must accelerate, move and decelerate very quickly. If the open sector of the shutter is smaller, the film can be moved more slowly and, accordingly, more gently. But we pay Ior this less strenuous movement by getting less light for the exposure.

What has all this to do with ordinary camerawork? you may ask, remembering, of course, that changing speeds and shutter openings are possihle only with a few cine cameras. Well to explain further, suppose we have an ordinary still camera and the established exposure Ior a given shot is f/8 at 1/25 second. II we shorten the exposure time to 1/50 second, we will have to open up the lens a corresponding amount—to f/5.6—in order to secure the same exposure.

It's the same in motion picture photography Suppose we are using one oI the popular cine cameras which has a shutter opening of 204° and gives an exposure interval of 1/27 second at 16 f.p.s. If we shoot a scene with this camera and find that f/8 is the right stop to use, the resultant exposure will be different from what another photographer would secure with a camera having a smaller shutter opening. Let's say the other photographer's camera has a shutter giving a 1/48 second exposure at 16 f.p.s. If he is to match our exposure on the scene, he will have to shoot it at I/6.7 (or lens stop nearest this figure, i e. I/6.3). If we, with our 1/27 sec shutter, are shooting at f/2.5, the other filmer will have to open up to f/1.9 to get comparable results; and if we are shooting at f/1.9, the other fellow with the Iaster shutter (giving less exposure per interval) won't be ahle to shoot the scene successfully at all unless he has an extremely fast lens, for he would have to use a lens opening of f/1.1 to match our exposure.

Another point to consider is that hy using the smaller lens stop, the scene will have much greater depth of field than it would if shot with a camera having a smaller shutter opening; and this difference would be increasingly noticeable as the lens was opened wider or focused on nearer ohjects, as for closeups.

On the other hand, in the matter of getting clear, hlurrless pictures of fast-moving objects, the camera with the smaller shutter opening offers a distinct advantage. Fast moving objects will be registered on the film in a shorter exposure interval. Because they will have less time to move during the exposure, less blurr will result.

Obviously, the solution to the shutter problem for the advanced amateur is the adjustable shutter, same as found on standard 35mm motion picture cameras, which will permit adjusting the shutter opening to suit the shot. All professional 35mm cameras used in the studios have variable shutters and most oI them permit adjusting the shutter opening while the camera is running, iI necessary This has proven a valuable adjunct in shooting scenes where the camera moves in and out of dark areas, or for trick effects where speed of a person or an object is to he altered without stopping the camera

The ability to make fades and lap-dissolves in itself justifies the variable shutter as standard equipment for all cine cameras. Next, and much more important, is the control oI exposure afforded by the variable shutter. Reducing the lens opening increases depth of focus, and increasing the aperture size reduces depth. Such changes between closely related scenes are not pleasing; and when light fluctuations, such as a cloud passing over the sun, for example, make such changes necessary within a scene, they are douhly ohjectionable. But hy oontrolling the light with the shutter instead oI the lens diaphragm, such depth of focus contrasts can he avoided.

If, for instance, we are shooting on one of those days, say, when small clouds are obscuring the sun, we can set our lens at, say, f/8.3 and the shutter at 90° and get the same exposure as though we shot at f/11.3 with the shutter opened at 170°. With cameras having a variable shutter,, when a cloud suddenly appears to reduce the light falling on the scene, the exposure can be kept uniform (in relation

Continued on Page 54

VARIABLE SHUTTERS are now incorporated in some of the high-speed motion picture cameras used by armed forces to record the performance of missiles and aircraft

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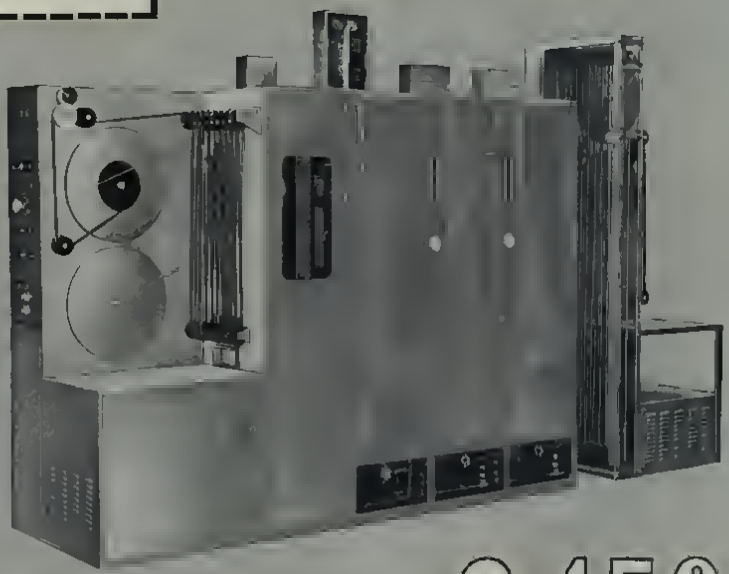

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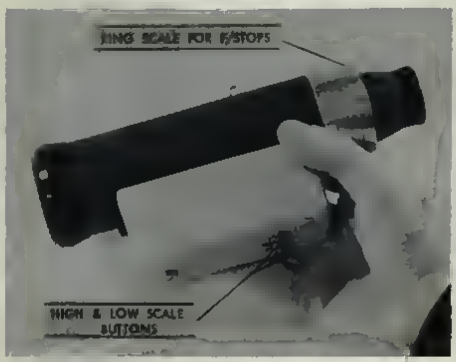
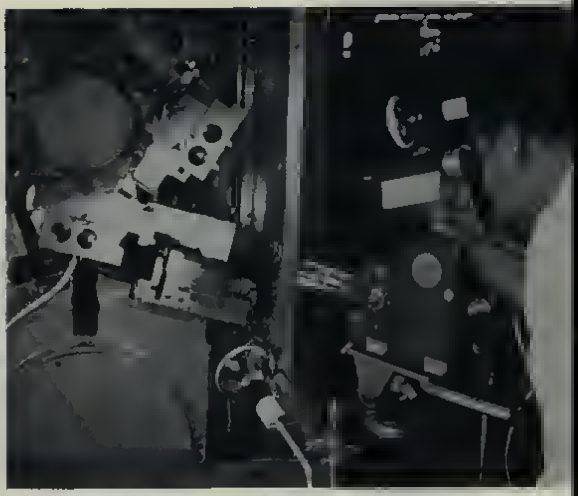



FAIRCHILD HS3201 exposure meter. Note high- and low scale buttons on bottom of unit. Ring scale for reading aperture setting is at right



TYPICAL APPLICATION of the Fairchild HS3201 exposure meter for reading light value in limited area in which subject of study is centered. Camera is Fairchild HS-101 high Speed motion analysis camera

# Exposure Meter For High-Speed Photography

**Its narrow acceptance angle renders accurate pinpoint readings not possible with conventional exposure meters**

MANY SUBJECTS OF industrial high-speed cinematography are so situated as to pose a difficult problem for the cameraman in determining exposure for the critical results expected Very often a moving part to be studied by high-speed photographic recording will he located within a complex mechanical setup, making it not only difficult to light but to evaluate in terms of the lens stop to be used.

Operators of high-speed cameras long have indicated a need for a "spot" type exposure meter having a narrow angle of acceptance that would read the illumination on a small area from camera position unaffected by extraneous light reflected by the adjacent area outside of camera range.

Conventional meters, when used at camera position, take in much more of a set-up area than is usually photographed and therefore "read" the total light reflected from such areas with the result that under-exposure can result where this condition is not compensated for.

A new reflectance-type exposure meter designed specifically for high speed photography is now being marketed by Fairchild Camera and Instrument Corporation, Syosset, Long Island, N. Y. Known as the Fairchild HS3201 meter, it is designed to accurately measure the amount of light that reaches the camera lens. This is said to be the first exposure meter in the high speed photography field that utilizes this principle of measuring reflected light as opposed to measuring incident light.

When using the HS3201, light readings are taken from the camera position by sighting the subject area to be filmed The unit is designed to measure the reflected light of a circle area 8 inches in diameter at a distance of ten feet. This narrow acceptance angle of 2° makes it easy for the high speed photographer to obtain accurate pin-point readings and better average readings. This is particularly important when the photographer is shooting complicated machine set-ups with light surfaces of varying intensity, (as illustrated in photo above).

Another advantage of this telescopic-type meter is the relative convenience of taking readings from the camera position. This eliminates holding the meter in dangerous spots near whirling machinery. It also eliminates danger of scorching hands while holding the meter under high intensity lights.

Operation of the HS3201 is simple. The meter is used

Continued on Page 56

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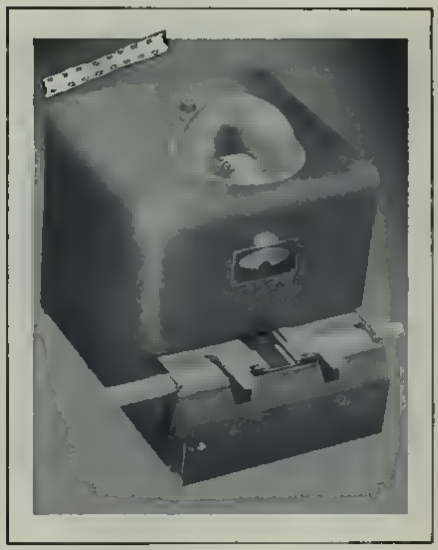

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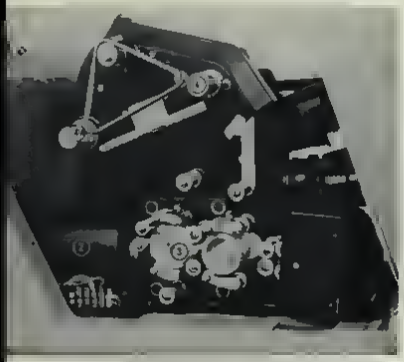
VIEW OF BLIMPED camera from rear. Eyepiece of camera's through-the-lens finder system is extended at the rear (1). Blimp is of fiberglass construction.



VIEW OF UNIT with door of blimp removed to show right side of Camerette. Motor that drives camera and recorder is shown at (2), the 16/35mm magnetic recording mechanism at (3), and the magnetic film supply and takeup spindles at (4).

VIEW OF OPPOSITE side. Footage counter, an integral part of Camerette film magazines, is shown at (5). Note that blimp is designed to accommodate camera with all three lenses mounted on the turret.

CAMERETTE DOUBLE-SYSTEM 16/35mm sound camera with mixer-amplifier, battery-power, and miscellaneous equipment. Originally designed by British Broadcasting Co. for its TV newsreel productions, unit is now in production for distribution in the U. S.

# Camerette Double-System 16/35mm Sound Camera

**Compact, portable unit provides top quality magnetic sound in positive sync with picture**

By JOE HENRY

WHEN THE BRITISH Broadcasting Company wanted a compact, reliable camera and sound recording unit for its growing TV news operation, the company designed its own, using a 16/35mm Camerette as the basic unit. To this was added a mechanically-coupled combination 16/35mm magnetic film recorder and the whole then encased in an attractive, lightweight fibreglass blimp. The result is an efficient double-system sound-film unit having all the advantages of lightweight and portability of a single-system sound camera. Following the initial designing of the unit, it was then turned over to G-B Kalee in England for production. In all, thirteen of the new Camerette magnetic sound-on-film 16/35mm motion picture cameras have been fabricated for and put into operation by BBC.

There's an interesting sidelight on what motivated BBC to design the outfit in the first place. In England, they're very fussy about authenticity of sound for newsreel pictures, especially dialogue. There's never any dubbing-in of spurious applause or laugh tracks, or of spe-

Continued on Page 51

# READY TO EDIT YOUR FILM?

**Good editing depends as much upon the footage you leave out as what you leave in the final cut**

THE REALLY CREATIVE part of making motion pictures lies in the editing—rearranging scenes and sequences to produce an interesting screen result. It's a phase of film making that calls for more than skill and knowbow; it also requires the right tools and good organization of procedure so that editing always remains a creative, inspirational thing instead of a chore.

Actually it is quite easy to organize the editing of your films in such a way that the cutting becomes no chore at all. There is a mechanical or formula routine which is followed by professional cutters and which 16mm film makers can adapt very profitably to their own use

The first step is to arrange the various rolls of film in the same order as shot and give each a consecutive number. Then project each roll or run through a viewer. If scenes were not "slated" during shooting, an identifying number should then be scratched on the emulsion side of the first frame of each scene. Badly-exposed or discard scenes should be marked with a grease pencil so they can easily be culled out later.

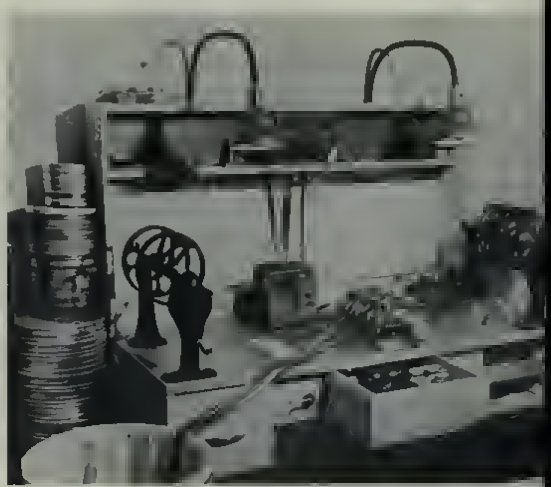
As the various rolls of film are thus previewed, another descriptive list should be made of the scenes in chronological order, using the identifying numbers, and giving a brief resume of the camera angle of and the action in each shot. For example, the designation of one random scene might read: *Scene 28 · LS · Jack in motorboat, pulling away from shore toward camera.* If you recall the action of your footage, brief descriptions such as this will serve to clearly establish the scenes when you start to assemble them later.

When all scenes on all of the rolls have been catalogued in this manner, you are ready to start "breaking them down." This consists of cutting the scenes apart and culling out those which have been marked for discard. The good scenes should be carefully rolled up, taking special pains to avoid scratching or other damage. Each scene thus rolled should be secured with a rubber band, and a slip of paper on which is marked the number of the scene inserted under the band for instant identification. Many non-professional film editors build or purchase pigeon-hole boards divided into 50 or 100 separate shallow compartments, each of which bears a painted number. The rolled-up strips of film are then placed in the compartment corresponding with their respective scene numbers.

The next step is the process known as "cutting on paper." It is here that the descriptive scene lists made in breaking down the film really come in handy. Using these lists, arrange and rearrange the scenes in various orders until a pattern of continuity is formed which you feel will have the desired screen effect Many editors find it handy to make out these lists using a separate 3 x 5 card for each scene, so they can be shuffled about with greater ease.

In "paper" cutting, you are concerned not only with arranging scenes in their logical sequence according to continuity of action, but also in getting as much variety and pace into the editing as possible. Each sequence should be

**Continued on Page 58**



**ADEQUATE TOOLS and a well-organized editing table make a simple task of film editing. A novel innovation in above arrangement is installation of the splicer in drawer, thus reducing clutter of equipment on top of table**

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THE NEW BOLEX 16mm Anamorphic lens provides a pleasing picture of 2-to 1 proportions, which is similar to the wide field which we see with our eyes

# WIDE SCREEN IN

Anamorphic wide-screen photography can add excitement and extra entertainment volue to any 16mm motian picture subject

By ERNST WILDI

SPARKLING, sharp closeups such as this are easily accomplished in 16mm with an Anamorphic lens coupled with the standard 1" lens

WHAT WIDE-SCREEN photography has done to give an exciting "new look" to theatrical motion pictures, it can do also for 16mm films—commercial, industrial, medical, travel, lecture and amateur.

As yet, a paltry few 16mm filmers have explored the real possibilities inherent in the anamorphic lens. Even though excellent lenses of this type long have been available both for photography and projection of 16mm motion pictures, the reluctance of 16mm film makers to go to CinemaScope-type photography appears based on a number of misconceptions. Loss of picture brightness and sharpness, difficulties in filming, and the possibility that a profitable market for such films might not develop are just a few. None of these are valid today, anymore than they are for 35mm CinemaScope.

Overcoming such misconceptions was a primary consideration when Bolex anamorphic lenses were being designed for 16mm cameras and projectors. Long before the lenses were placed on the market, a demonstration film was made with the first of the new lenses that proved most convincingly that anamorphic wide-screen photography can add excitement and entertainment value to any 16mm motion picture subject. The favorable reaction of audiences to this film has demonstrated the same enthusiasm for wide-screen 16mm pictures that followed the introduction of wide-screen 35mm feature films.

THE BOLEX 16mm Anamorphic lens mounted on the Bolex H-16 camera. Note corresponding mask mounted on front of finder.

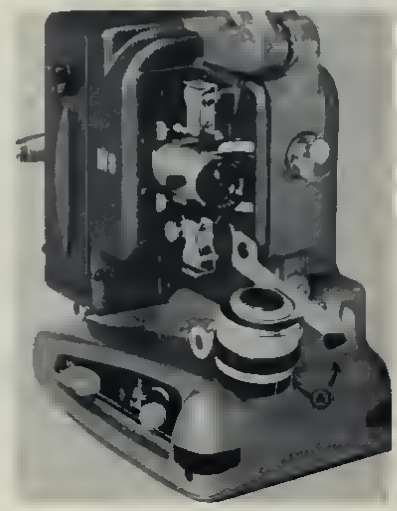
# SIXTEEN

In most systems of "squeezed-image" cinematography, the anamorphic lens is a separate or auxiliary lens that is mounted in front of the regular camera lens (or the projector lens). It consists of cylindrical elements which do not change the vertical aspect of the camera lens, but enlarge the horizontal angle of view. If we consider the regular camera lens and the anamorphic lens working together, we have a composite lens unit with the basic focal length in the vertical axis and a shorter focal length in the horizontal plane, thereby increasing the acceptance angle.

The Bolex Anamorphic lenses are made by the optical works of Moeller in West Germany, a firm that for years has specialized in cylindrical optics. It was the first European firm to build anamorphic lenses for CinemaScope projection. Today, almost every European motion picture theatre is equipped with Moeller anamorphots.

The Bolex Anamorphic lenses for 16mm cameras are designed as taking lenses, a fact to be emphasized, because it is well known that there is a great difference design-wise between anamorphic camera and projection lenses. Anamorphic camera lenses must have much higher resolving power to provide best possible picture sharpness on the film. Projection anamorphots, on the other hand, can be of relatively simple design and they rarely provide satisfactory results when used for photography. Our anamorphic lens tests were made using Kern-Paillard Switar camera lenses, which today are considered among the

THERE'S A WIDE SCREEN lens for the Bolex 8mm camera, too. The simple mounting bracket permits the Anamorphic to be moved forward for access to the focusing and diaphragm controls of the camera lens.



UNIQUE swing out bracket for the Bolex M 8 8mm projector makes possible instant switching from regular to wide screen projection. Arrows at "A" point to Anamorphic lens and bracket swung away for conventional projection.

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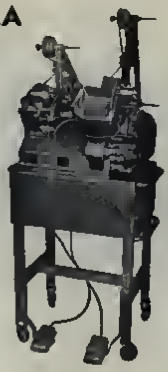

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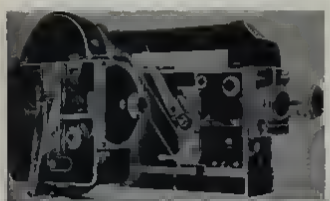

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sharpest and best corrected 16mm camera lenses available. The Bolex Anamorphic lenses are considered of comparable quality, producing wide-screen photography that is sharp from corner to corner.

The Bolex Anamorphic lens for photography is not mounted directly on the front of the camera lens but on a separate bracket (see photo) which allows it to be moved forward or backward on two supporting studs. This permits the basic camera lens to be focused and its diaphragm set without hinderance or removal of the Anamorphic lens. While the supporting brackets mentioned above are made only for Bolex H cameras, the Bolex Anamorphic lens can be used with other 16mm cameras, supported on brackets made especially for the respective camera—a simple job for any home workshop mechanic.

In actual practice, both the basic camera lens and the Bolex Anamorphic lens are focused individually, and since no loss of light is involved by the addition of the latter, diaphragm of the camera lens is always set as when filming without the Anamorphic, and according to the prevailing light.

It is recommended that the Anamorphic lens be used only with basic camera lenses of the highest quality, because any lack of sharpness inherent in the latter—especially at the sides or corners—will be spread in wide-screen photography over a larger area on the screen.

The versatility afforded by camera lenses of different focal lengths is neither lost nor diminished by the addition of the Bolex Anamorphic lens, which has produced excellent results when mounted before such basic lenses as the Switar 16mm f/1.8 wide-angle, the various 25mm standard lenses including the extremely fast Cinor 1" f/0.95, the Switar 50mm f/1.4, and the Tele-Cinor 75mm f/2.5.

Sixteen millimeter cameras having a reflex or through-the-lens finder are ideal for wide-screen photography, affording as they do a view of the scene exactly as covered by the Anamorphic-camera-lens combination. The Octameter or Preview Finder of Bolex H cameras permits viewing and composing scenes for wide-screen photography with the addition of a mask on front of the finder, as illustrated at the top of page 49. The mask alters the picture ratio to correspond to the 2-to-1 ratio of the Bolex Anamorphic lens and regular camera lens, used in combination. When a wide-angle lens is to be used with the Anamorphic, then other means must be employed to view the scene in its proper wide-screen proportion. Where a Bolex H-16 Reflex camera is used, the wide-screen ratio can be observed on the groundglass of the reflex system.

One misconception encountered among 16mm photographers is that anamorphic wide-screen photography is best-suited to distant scenes, panoramic views, etc. This is no more true than it is for conventional 16mm photography. Some of the most interesting scenes in our demonstration wide-screen film were closeups of areas only a few inches in width. The icicle scene on page 48 is a typical example of the quality of a closeup filmed with an anamorphic lens.

The Bolex Anamorphic lens focuses down to 3½ feet. The figures below show the picture areas covered at this distance when the Anamorphic is used with three different lenses:

| *Lens* | *Area Covered* |
|---|---|
| 25mm | 11½" x 23" |
| 50mm | 5½" x 11" |
| 75mm | 3¼" x 6¼" |

The expansion factor of the Bolex Anamorphic lenses is 1.5-X resulting in a 2-to-1 picture (aspect) ratio compared with the standard motion picture ratio of 1.33-to-1. The 2-to-1 ratio was chosen rather than the CinemaScope 2.66-to-1 ratio for a number of

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reasons — one of which is increased brightness in the projected image. The laws of light tell us that the brightness of a projected image is directly related to the size of the projected picture. Scenes projected in CinemaScope, for example, are twice as wide and would appear only half as bright as comparable scenes filmed in the standard 3 by 4 ratio were it not that extremely powerful illumination is employed in the projectors to obtain the standard in brightness level.

Thus, we see an advantage in the 2-to-1 aspect ratio of the Bolex Anamorphic lens: the diminished light is much less with the result that wide-screen pictures in 16mm can be projected with most of today's improved high-intensity 16mm projectors.

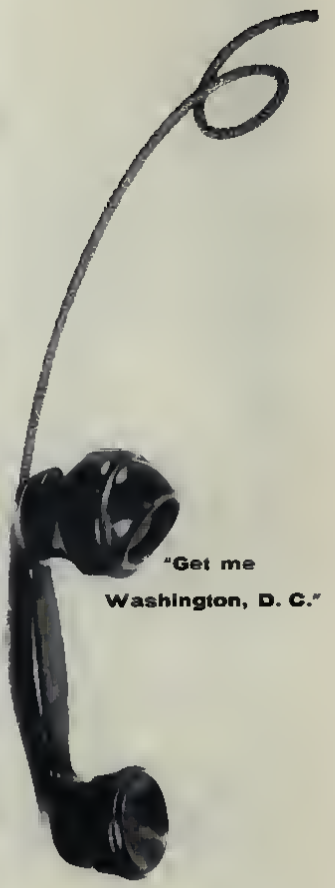
Convenience in projection was another reason that the 2-to-1 ratio was chosen rather than 2.65-to-1. Wide-screen films should be projected so that the height of the screen image is the same as it would be for the standard aspect ratio of 3-to-4. There is no point in shooting a 16mm picture in the wide-screen format and then projecting it on the conventional screen, for the result will be a smaller and less-effective presentation—and the whole purpose and all the benefits of wide screen are lost.

If the correct screen size is based on picture height, as stated above, 16mm wide-screen pictures having an aspect ratio of 2-to-1 should be projected to at least 4½-ft. by 9-ft. in size. This means that the projection screen must be 9 feet or more in width. The screen curvature, which is usually required for the larger CinemaScope film presentations, is not necessary to projection of 16mm wide-screen films photographed and projected with the Bolex Anamorphic lenses.

The one Bolex Anamorphic for projection purposes can be used with projection lenses of various focal lengths, providing the diameter of the front lens of the latter does not exceed the diameter of the rear lens element of the Anamorphic. Brackets for mounting the Bolex Anamorphic projection lens on most of the popular makes of projectors are available through most dealers handling the lens. Paillard provides a custom-made bracket for the lens where it is to be used on Bolex projectors. (See photo bottom of page 49.)

Considerable credit is due the makers of Bolex equipment for recognizing the possibilities anamorphics hold for sub-standard films and for having the courage to place on the market efficient lenses for wide-screen photography and projection. These are not mere gadgets for amateur movies, although amateur film makers will find in them new means for creative expression. But it is in the many professional and semi-professional fields of film making that we are about to see more and more "wide screen in sixteen."

Nor has the 8mm cine enthusiast been overlooked. Similar Bolex Anamorphic lenses are also available for 8mm cameras and projectors. ■




## CAMERETTE DOUBLE-SYSTEM SOUND CAMERA

Continued from Page 45

cially recorded dialogue to replace the original Newsfilm sound tracks must carry the original, authentic sound as it occurred at the time the films were photographed.

Obviously, this required BBC's newsreel men to cover news events as accurately with the microphone as with the camera. Also, it meant a need for the most compact and portable equipment possible for recording sound and pictures. The Camerette double-system sound camera is the result.

The magnetic sound recording unit is mounted on the right side of the Camerette, and is driven by the same motor that drives the camera. With this mechanical coupling of recorder and camera, the sound is always in sync. A synchronized identification system puts a short pulse tone on the sound track and a mark on the picture film simultaneously, thus enabling the picture film and sound film to be readily matched later by the film editor. As with single-system sound cameras, both mechanical units—the camera and the recorder — are combined within the sound-proof blimp. All power necessary for driving the camera-recorder motor and for the amplifier are supplied by a 24-volt battery. The 24-volt motor is further controlled by a governor, affording exceptionally good speed stability.

The only modification necessary to the Camerette was extending the eyepiece of the through-the-lens finder to

the rear and out through the blimp, affording the same viewing-while-shooting convenience with the blimped camera that is a basic outstanding feature of the Camerette.

The blimp was designed to accommodate also the regular Camerette 16/35mm film magazines which take up to 400 feet of either 16mm or 35mm film.

For sound recording, either 16mm or 35mm sprocketed magnetic-coated film is used. A feature is the fact sound may be recorded at two different speeds—36 feet per minute or 90 feet per minute — while the picture film travels in the camera at the conventional rate of 24 f.p.s. or 90-ft. a minute. Thus it is possible to shoot pictures on 35mm film and record the sound for same on 16mm traveling at the slower speed of 36 feet per minute. In this way, but one 400-ft. roll of 16mm magnetic film stock is required to record the sound for almost three 400-ft. rolls of picture negative. The speed of both the picture and sound films can be altered at any time and independently of each other by the flick of a switch.

Engineers have commented that the sound quality obtained with the Camerette 16/35mm sound camera is comparable to major studio film recordings, and that the camera might readily be used for feature film production except that on the sound stage there is no need for the sound recording and photographic units to be integrated.

On the mixer, two microphone input channels are provided, each with its own input amplifier, gain control, and high and low frequency controls. Outputs from both input amplifiers are mixed and fed through a volume control to the recording amplifier. Total R.M.S. flutter is only about 0.15% on 35mm and about 0.2% on 16mm. The recorder, incidentally, can be operated independently for making non-synchronized sound tracks.

A separate playback amplifier is provided with a selector switch enabling the operator, using headphones, to monitor either the direct signal or playback. The recorder is equipped with a high-speed peak volume indicator, built-in tone generator for testing, and provision for circuit metering.

A microphone mounted in the amplifier panel provides communication with the cameraman by the mixer and for recording verbal sound track identification.

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Besides the convenience and portability offered by this new Camerette sound-film unit, it requires only a minimum of manpower—a camera operator and a sound man. It is ideally suited to newsreel and documentary film productions, for remote TV program productions such as the Ed Murrow Show or the special film segments photographed for the Ed Sullivan Show. The whole unit, blimped camera and recorder, is a compact 100 pounds in weight, with overall dimensions of 24" x 15" x 17". Distribution is by Houston Fearless Corporation, 11805 West Olympic Blvd., Los Angeles, Calif. ■

## SOUND RECORDING

**Continued from Page 36**

sential if a man is to become a top-notch recording engineer.

Of the factors mentioned above, perhaps no other single item demands of the film maker undertaking sound recording such careful selection and evaluation as the microphone that is to be used with his recorder. There are a great many makes and types of microphones on the market and the one for you is the one best suited to the type of work it is to do. Your task is to find the one that will best do the job.

In general, you get what you pay for, as in everything else. However, there's a limit to this—a point of diminishing return. There's such a thing as getting a microphone too good for the job it's intended to do. To be specific, some of the finer microphones have extended frequency ranges up to 15,000, 17,000 or 18,000 cycles. You don't need that. While it may be nice to have the range, it isn't necessary for film work. The microphone that goes to 12,000 or 13,000 cycles is quite acceptable. Another point: the higher range can be a disadvantage when recording some types of sound material where the material has an extremely high frequency response, very rich in harmonies. In such case, the high frequency microphone is more difficult to control than one having a less extended range.

Following are some basic features essential to making proper choice of a microphone for magnetic recording:

*Directional Characteristic.* For most film recording work, it's advisable to use a *directional* microphone—one that records from one direction, or records in greater volume from one direction. The sound isn't completely blocked out on the other sides but the volume is considerably reduced. The ratio of volume between the side that records and the reverse side is called Front and Back Ratio, and it may be as much as 20 or 25 decibels.

The obvious advantage of the directional microphone is the blocking out of unwanted or undesirable noises that are in the same vicinity with the sound that is to be recorded. For instance, where a room may be noisy at one end, the directional mike would be set with the dead side toward the noisy end of the room, and the live side towards the sound we want to record. The same thing would apply on location. If you were working around a busy highway, you may not mind the noise of the trucks going by—in fact, you might want this noise for background. But, you don't want the truck noises so loud that they interfere with or drown out the voices you may be recording. So, you set the mike with the dead side toward the trucks on the highway, and the live side toward the voice you plan to record.

In some locations a directional mike is absolutely essential. In a noisy machine shop or manufacturing plant it's almost impossible to pick up voices or specific sound effects because the total noise level is so high. But, with the directional mike you can blank out or reduce the unwanted sounds.

Some directional mikes have a small switch mounted on the side which makes it possible to change the microphone from directional to non-directional, or omni-directional. On occasion you will want the omni-directional microphone. As an example, if you want to pick up the voices of a number of persons grouped in a circle, you can hang the omni-directional microphone above them and pick up all voices equally. The directional mike, if placed on its side, above the group, with the live side pointed down, can be used for the same purpose.

*Pre-Amplification.* The pre-amplification of sound at or near the microphone is also desirable. The output level or energy coming out of any microphone is extremely low. So it has to be amplified electrically in order to boost this energy enough to get sufficient volume to work with. The reason for pre-amplification is to bring up the volume at the microphone so that it's easy to handle electronically.

Sometimes pre-amplifiers are built


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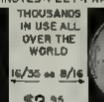

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into the main amplifier of a recording channel In many modern microphones a pre-amplifier either is built into the microphone itself or comes in a small compact carrying case that works in close proximity to the microphone.

There's a practical advantage in having the amplifier built into the microphone in that the sound is immediately amplified in volume so that the microphone cable that leads from the microphone to the recording machine can be handled with greater freedom With a strong signal going thru the cable the recorded sound will over ride any other induced current that might come from electrical wires running to the lamps, from AC cords, and so forth Without this amplification, induced hum and other electrical disturbances might get into a signal running through the microphone cable. The louder the signal leaving the microphone, the greater chance it has to force its way through other electrical "obstructions."

Another advantage of having a built-in pre-amplifier is that it makes possible the use of a longer microphone cable If the sound level has been built up in the pre-amplifier near the microphone, the signal will be strong enough to be pushed through a longer cable And, under some recording conditions it's necessary to use longer cables

There's still another value to having a high-output mike system When it's fed into the recorder, the greater volume coming through makes it possible to back up the volume control — in other words, "use less gain." And, the less gain you use, the lower the level of any other noises going into the recorder, including those created within the recorder itself This is described as fine signal-to-noise ratio. Sometimes, utilizing the pre-amplifier volume from the microphone will make it possible to record acceptable sound on a recorder with a poor signal-to-noise ratio, because the volume coming in will override the results of the poor input arrangement

Some microphones have comparatively high outputs, without pre-amplifiers. However, most of these microphones have something less than perfect *frequency response*—a subject we shall go into in detail next month. ■

## VARIABLE SHUTTER

**Continued from Page 41**

to preceding shots) by simply opening the shutter to a wider aperture If the clouded light would be a normal f/8.3. all we need to do is open the shutter to 170° and we get the effect of increasing the exposure to the proper value without changing the depth of field in our picture

The same procedure may be followed in panoraming and in making moving camera (follow) shots. Suppose we are following a person with the camera. walking from bright sunlight into heavy shade. Let's say there is a good three stops difference in the exposures between the lightest and darkest areas of the scene We can begin the sunlit end of the shot with the camera lens open three stops wider than normal—say f/5.6—and the shutter closed down to about 50°. As our subject moves into the shade, the shutter is opened up to 170°. Throughout the shot, both exposure and quality of picture will be uniform, for we offset the changing light by increasing exposure time from 1/115 to 1/34 second. The same expedient can also prove useful in super speed "slow-motion" shots, as well as in making u n d e r c r a n k e d fast-action scenes,

Finally, the controllable (variable) shutter will prove its worth in scenes of fast moving action. By reducing size of the shutter aperture, exposure time is cut, resulting in crisp, blurrless pictures

When shooting fast action, especially where objects travel directly across the camera field and are being photographed by a static camera, reducing the opening of the variable shutter blades automatically increases the shutter speed and there is less time, because of the shortened exposure interval, for the subject to move and blurr individual frames of film The result is sharper detail and brilliant "stop-action" shots

Depth-of-field control is still another important advantage of the variable shutter. For example. to reduce sharpness of an objectionable background in a scene while at the same time keeping the foreground images sharp usually requires opening up the lens diaphragm. Obviously, this means admitting more light to the film To compensate, the shutter opening is decreased so that the desired background result is achieved without altering the exposure norm for the scene.

Altering the variable shutter opening changes the amount of light reaching the film and therefore changes the exposure. In order to obtain the same exposure while increasing the shutter speed, the lens stop is increased. The result is reversed when the shutter speed is decreased.

Owners of Bolex H-16 cameras now may have a variable shutter installed in their cameras at nominal cost by Tullio Pellegrini of San Francisco, Calif. By adjusting a lever which is installed on one side of the camera, the following range of shutter speeds may be obtained.

| SHUTTER SETTING | OPEN | ¾ | ½ | ¼ |
|---|---|---|---|---|
| 8 frames per sec | 1/18 Sec | 1/26 | 1/35 | 1/70 |
| 16 " | 1/35 " | 1/53 | 1/70 | 1/140 |
| 24 " | 1/53 " | 1/70 | 1/105 | 1/210 |
| 32 " | 1/70 " | 1/105 | 1/140 | 1/280 |
| 64 " | 1/140 | 1/210 | 1/280 | 1/560 |

Professional 35mm motion picture cameras, such as those used in the studios. for newsreel and television film production have variable shutters. The general mechanical structure of a typical motion picture camera shutter is a disc—that is, it is a portion of a disc—which rotates behind the lens and before the film in the camera. It is synchronized with the camera movement so that it is closed during the interval the film is being advanced and made ready for the next exposure This subsequent exposure takes place when the shutter continues to revolve, so that its open portion exposes light to the film as it comes through the lens. and for the interval permitted by the size of the "open portion" of the shutter.

The Mitchell 16mm professional camera—little brother of the big NC and BNC Mitchells used on studio sound stages—is equipped with variable shutter, Early models had a two-blade shutter built into the camera box Later models have a three-blade dissolving shutter. A shutter adjusting (band dissolve) lever at the rear of the camera is used for effecting dissolves manually. or it can be set at fixed shutter openings in increments of 10 degrees. The lever moves across a calibrated scale which indicates the degree of shutter opening The scale is calibrated from zero to 175° — the maximum shutter opening on the earlier "16" models—and to 235° on the later model.

The dissolve handle has a positive

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pin lock so that the shutter setting will not change while the camera is being operated. The shutter is synchronized with the movement so that when its open segment is in front of the aperture the film will be at rest, with the registration pins engaged. The film is subsequently advanced while the opaque or closed section of the shutter covers the aperture.

As may be seen, except for the feature which enables fades to be automatically made in the camera, the basic function and results of the variable shutter is the same in the cine camera as in professional 16mm and 35mm cameras. The cine camera owner with a variable shutter camera therefore has in his hands essentially the same tool as the professional. If he fully understands the scope and the possibilities inherent in the variable shutter, he is capable of greatly extending the usefulness of his camera and the range of his photographic accomplishments.

## EXPOSURE METER

**Continued from Page 43**

like a telescope. The photographer sights through the eyepiece, aiming a black dot in the field (actually the back of a tiny light sensor) at the subject to be filmed. Pressing either the high or low buttons on the underside of the meter shows a dial reading in the field.

Setting the dial reading obtained from the meter on the ring scale opposite the film speed will position the ring scale to give correct aperture setting for any picture-taking rate. The HS3201 is calibrated for the exposure constant of Fairchild Motion Analysis Cameras.

The light value range is 0 to 25,000 foot candles on the low scale and 0 to 500,000 foot candles on the high scale. The picture taking rate scale is calibrated in 100, 200, 300, 400, 500, 1M, 2M, 3M, 4M, 5M, 10M, 15M and 20M frames per second while the values on the aperture scale are calibrated for the following f/ stops: 1.0, 1.4, 2.0, 2.8, 4.0, 5.6, 8.0, 11, 16 and 22

The unit comes with a strap attached which allows the photographer to conveniently carry it suspended from his neck. Easily held in one hand, the HS3201 is 8 inches long, 3½ inches deep and 2¼ inches wide.

The HS3201 meter, which is priced at $179.50, completes the Fairchild package of high speed motion analysis photographic equipment. Other units include high speed motion analysis cameras and the "Mini-Rapid" 16mm and 35mm film processors which were described in *American Cinematographer* for December, 1957, (page 799).

## FILMING COURTROOM DRAMAS

**Continued from Page 33**

To photograph the show requires a technical staff consisting of director of photography, 3 operative cameramen, 4 assistants, gaffer, best boy, 3 electricians, head grip, dolly operator, prop man, make-up man, sound mixer, sound recorder, and mike boom operator.

All camera movement and zooming action is controlled through intercom by Director Sandy Spillman assisted by Film Editor Tholen Gladden. Basic moves are worked out for coverage and continuity by Gladden before filming begins. Frequently much of the camera movement is ad-libbed as the show progresses. After the first few shows, the camera crew became so adept at moving the camera and zooming the lens that they soon developed into a finely-coordinated team. Grips and cameramen now anticipate moves by studying the action as the show progresses so that filming it becomes a completely integrated work in which everyone, crew and actors alike, move into the right place at the right time without need for rehearsals or run-throughs of any kind.

Retakes for "Night Court" are almost nonexistent. Should an actor stray too far from the script at any time, the cameras are kept rolling and he is told by the director to go back and pick up the scene from the point where he got off the track. The extraneous footage, of course, is deleted in editing. But this rarely happens, and it is of little consequence when it does occur because of the little time and film involved. Ability to pick up the scene from any one of the three cameras permits Film Editor Gladden to avoid jumps or bad action matches.

Should the cameras run out of film in the middle of a scene, it is a simple matter to cover by overlapping dialogue a few lines. Only five retakes have had to be made in the fifty-six shows recently filmed, and two were required because of lab errors.

While camera set-ups do not change between shows, actual movements vary a great deal. No two shows are filmed exactly alike. Camera movement is planned to fit the particular sequence being filmed. This results in a flexible, free-flowing technique that preserves the spontaneity of the action.

"We strive for reality," explains Director of Photography Whitley, "by using a documentary style devoid of theatrical tricks. Our set walls, for instance, are not 'goboed' off at the top, as they would be in a theatrical motion picture. Instead, they are illuminated all the way up as they would appear in a real courtroom. Lighting, camera angles and camera movement all contribute to the spontaneous, sometimes hesitant, action of the person on trial. Cameras 1 and 2 are at the far end of their track, and the zoom lens is at its widest position, at the beginning of a sequence so that the courtroom can be re-established and the defendant brought to the bench in a wide-angle sweeping motion. As the case progresses the cameras move in, and the zoom lens is adjusted to telephoto position for a more intimate view of the proceedings."

At first glance the filming technique employed—three cameras shooting simultaneously — seems quite familiar, since it is similar to live television practice and has been utilized in filmed TV shows since the earliest experimental days. But on closer inspection the similarity ends because "Night Court" is not only dependent on its excellent technical execution but its spontaneous "live" quality which has never before been captured so realistically on film.

The many courtroom dramas now being offered the television viewer all strive for a realistic "you are there" quality, but few succeed in having their actors accepted as real people living a real-life drama. "Night Court" captures this feeling of actuality through its deft camera handling, perfect casting,

### TECHNICAL DATA
### "NIGHT COURT"

Created by ..... Sandy Howard
Producer-Director ..... Sandy Spillman
Director of Photography ..... William F. Whitley, ASC
Camera Operators: Jud Curtis, Joe Jackman, and Benny Wesler
Production Supervisor ..... Jesse Corallo

CAST

Judge ..... Jay Jostyn
Public Defender ..... Barney Biro
Court Clerk ..... Phil Tully
Bailiff ..... Ed Faulkner

Photographed with Mitchell BNC cameras.

no rehearsals and wonderful action, by unknowns for the most part, who, since they are unfamiliar, are readily acceptable as real people It is the unique combinstion of documentary quality and technical polish that contributes so perfectly toward creating this excellent courtroom drama

"Night Court" was created by Sandy Howard, is produced and directed by Sandy Spillman and features Jay Jostyn as the judge. Barney Biro, as public defender, Phil Tully as court clerk and Ed Faulkner as bailiff round out the cast of regulars The defendants brought before Judge Jostyn are mostly unknowns

Almost four hundred actors and actresses (seventy-eight shows averaging five defendants per show) have appeared before the cameras in the present series. With a few exceptions they are newcomers to the screen. Their television debut amounts to a screen test before forty million viewers! It is their big chance and they are given every opportunity to play their parts in their own way. They are not held to the exact dialogue in the script, although they are given certain key words and phrases to use. Their interpretation of the defendant on trial from dog poisoning to swimming in the park pond is strictly their own.

Often a promising actor applies for a part where no role is available to fit his particular type. Here the writers often get together and in ten to twenty minutes come up with a case to fit the person's peculiar talent or personality. This is just one of the many reasons "Night Court" casting is so successful. "The secret," confides Director Spillman, "is in throwing the show to the actors. It's all theirs!" While this may seem a highly simplified statement, it demonstrates the extent of the actor's contribution in creating and sustaining the believable atmosphere so necessary in a real-life show of this kind The actors succeed because they are so perfectly cast for the part they play and are allowed to "play by ear" without being held to the letter of the script. After all, most are appearing before a judge for the first time and a slight hesitation, nervousness, inability to project or even momentary loss of speech—seems quite natural. It is often difficult to ascertain where realism leaves off and acting begins. Most of the defendants are on stage three to five minutes and while they rehearse their lines (by themselves on another


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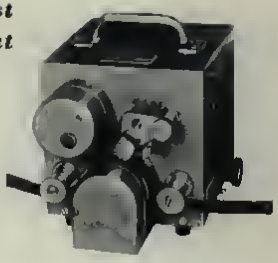

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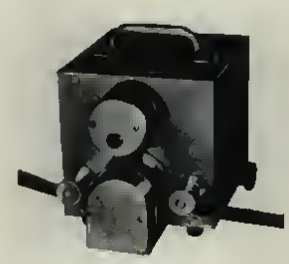

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stage) they do *not* walk through their part nor talk to the judge before they actually appear before the camera.

Obviously, photographing a show of this type is anything but a minor contribution. Getting it on film in a manner to point up its spontaneity and to give audiences that genuine feeling of "you are there" demands imagination and thorough pre-planning, and above all an alertness by those charged with the photography unparalleled in any other field of film production.

## ANIMATION

Continued from Page 39

pending upon the speed of the action

Pan backgrounds can be designed in a number of ways to present the effect of most any type of camera move. A vertical pan gives the effect of the camera following action upwards, while a diagonal pan follows a movement up the slope of a hill, or something similarly at an angle. Horizontal pans—which are most common—present ordinary walking or running actions on a level surface.

Using a multiplane animation camera (see Fig 2), backgrounds can be "broken down" to various levels, with each level being moved at a different speed, for third-dimensional effects. The actual lengths of pan backgrounds are arbitrary, determined in general by the timing allowed an action by the director, and specifically by the animation. All sorts of intricate effects can be obtained by combining various types of pan moves with changes in perspective within the pan, along with camera trucks, overlays, and variously moving background levels. Animation mechanics assume a more complicated aspect in the case of pan moves.

So the reader may understand how a simple horizontal pan is effected in animation, let us take a hypothetical case —say the action of Donald Duck, as a soldier, marching on the parade ground, as mentioned earlier. Action in the script called for Donald to march along at a fixed tempo, which the animator estimated would be one complete step every twelfth frame in the sequence. He was to move from left to right in a medium shot and take ten complete steps in all, a progression of movement which would amount to 23 1/16" on the background. Before this figure was arrived at, the animator had to resort to a little arithmetic. His conclusion: the scene length allowed him was 7 feet plus 12 frames, or a total of 124 frames. Donald's tempo of marching was to be—in the vernacular of the animation industry — "on twelves," which permitted him the ten steps called for with a few frames left over. For the size that Donald was drawn each step was 2¼ inches in length. Ten times 2¼ equals 22 inches or 120 frames of film that would be required to animate Donald's ten steps. But as the scene was to be 124 frames in length, the extra four frames were utilized in effecting a smooth pan action—the leading in to and out of the first and last steps.

In order to determine exactly what fraction of an inch the pan movement was to take for each exposure, the animator was presented with a problem of simple division, and at the same time he had also to consider that the pan was not to begin on the first frame but on the second, and was to end on the 123rd frame instead of the 124th for the reason explained above.

This will give a fair idea of the problem the animator faces whenever panning action is written into the script. The example described is a comparatively simple one, for purpose of illustration, since only one character is moving in the scene at a constant rate of speed. Real complications arise when several characters are to move at varying rates of speed and on different cel levels. In such cases, the problems are but amplifications of the fundamental principles described.

The animation of Donald walking took place in one spot on the drawing, with each foot—as it remained in contact with the ground—being advanced in position on the drawing just 3/16 of an inch from the preceding one, thus corresponding with the distance estimated for each individual pan move in the animation procedure.

Actually, as the sequence was shot, Donald remained fixed and simply "treadmilled" his walking action as the background drawing, on a lower cel level, was moved the required distance of 3/16-inch between each exposure. Care was taken to see that the change in the position of the foot contacting the ground in each successive drawing amounted to no more and no less than 3/16-inch, otherwise Donald would appear to be gaining or losing ground. The movement of 3/16-inch, of course, is entirely arbitrary. A step in a pan action can move as little as 1/64-inch or as much as 1½-inches for fast action.

To give a more realistic feeling of third dimension, a pan background frequently is broken down into several levels, with each level moving at a different speed. Thus objects in the near foreground will appear moving faster past the camera than those in the far distance. The layout-man designs his layout so that the foreground plane can be moved independently of the rest of the background. Thus the foreground level might move at 3/16 of an inch per exposure while the far level moves at 1/16 or even 1/32.

The Multiplane camera, as designed by the Disney studio, affords opportunities to obtain remarkable results in third-dimensional effects and has opened up new possibilities in the freedom of camera moves. It permits various background levels to actually be separated from each other by several inches, which gives a true illusion of depth to scenes. Action cell-levels are spaced accordingly, and great freedom of movement is possible by the action animating from one background plane to another. So far, however, the use of the Multiplane camera has been governed by pictorial rather than action requirements, and has seen its best service in such pictures as "Fantasia", "Bambi", and other Disney full-length features where backgrounds and scenic effects play an important part in enhancing the dramatic action of the story.

(To be continued)

## READY TO EDIT?

Continued from Page 46

well established with a long shot, and the locale should also be re-established from time to time with a similar shot. Endeavor to use closeups for full effect, placing them where the action requires a close view of the subject for clarity or variety. Where it appears that gaps have been left in the continuity during shooting, scan your scene list for related scenes that may be used as cutaway shots to bridge these gaps.

Incidentally, there is no better way for the 16mm cameraman to learn how

to cover a subject fully from the standpoint of continuity than to do his own editing In the cutting room he will quickly learn what shots he neglected to make, and why these shots are so vital to a smooth flow of action By observing these details, he will soon become instinctively aware of the scenes that are necessary to form a complete sequence, and he will automatically make sure he gets them on film when shooting

When you have juggled your scenes on paper until they seem to form a pattern with good continuity, it is time to make the first rough cut. Line the scene up in the order indicated on the "paper" cut list A good method is to hang all scene strips head up on an editing rack consisting of a wooden frame with a row of tiny nails on it, and suspended over a bin lined with clean muslin. Such a bin is shown in the lower left-hand corner of the accompanying photo. In this way, you can visually check each scene in relation to those that precede and follow it, and correct any inconsistencies which may be obvious

The next step is to splice the scenes together in chronological order. being careful not to cut off the slate numbers or any identifying marks scratched into the emulsion. Leave these guides intact until you have checked the rough assembly of scenes on a projector; then if any rearrangement is necessary, you will still be able to identify the scenes by number. Next, run the reel of rough-cut scenes on a projector, Moviola, or table viewer, paying close attention to the flow of continuity. You may have to run the film several times before you begin to observe a certain flow and pace becoming apparent. Keep paper and pencil handy and make notes on further cuts or revisions to be made.

You may notice that some scenes are too long, that others have "dead areas" of action which should be trimmed out.

Continued on Page 61


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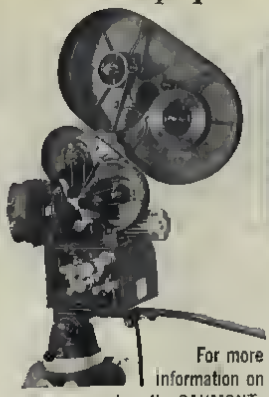

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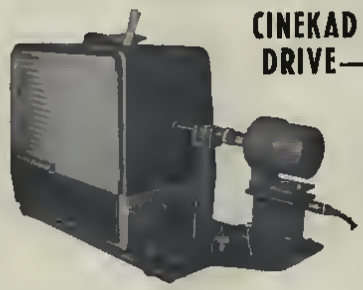

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## READY TO EDIT?

Continued from Page 59

Perhaps there is some jerky camera movement which can be deleted without interfering with the basic action of the scene. If you have overlapped action in staging your scenes, determine where the action of the two scenes matches especially well, permitting a smoother cut. You will find that adequate and comprehensive notes taken on all these various points during screenings will prove extremely valuable when you actually start cutting.

If you have organized your editing quite successfully up until this point, it is quite simple to follow through with similar organization in the basic cutting. It is at this point that the novice becomes swamped with the task of bringing order out of celluloid chaos—usually ending up in a fairly frustrated state, with film on the floor and a rather dim idea of just how to begin. Take a tip from the professional editor and work on one sequence at a

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time, beginning with the first and going on to the next sequence only when you are satisfied with the cut you have made In cutting a sequence, think of it as an entity. so that sequence will have an overall flow and a unified meaning. This means that you will have to think ahead to a certain degree, because a cut that seems perfectly all right between two consecutive scenes, may seem less effective when viewed in terms of the other cuts that must follow

In cutting, a good film viewer such as the Craig Projecto-Editor, B & H Filmotion Viewer, SOS "Jr.-16," etc., set between a pair of rewinds is essential.

Consulting your notes, run your first two scenes back and forth through the viewer until you see a spot where a good cut likely can be made. With a red grease pencil draw a line across the film between the sprocket holes of the frames in each scene where you wish to make the cut It is a good idea to extend this line into a T-shape, with the stem of the T extending into the "dead" area of the scene, or that which you will discard. This will insure against cutting into the wrong part of the scene when you get around to splicing.

When you have marked an entire sequence for cutting in this manner. you then go into the splicing session and actually make the cuts The editor who marks a single cut and then runs to make the splice not only wastes a lot of time, but be is apt to let the continuity of the sequence get away from him. It is far better to do the creative end of the cutting first, then attend to the mechanical part, or splicing, after charting of the sequence is completed

Following the splicing of a whole sequence, attach leaders and run the footage on your projector to check the impact from the screen. Invariably there will be some alterations or revisions to be made—scenes shortened for pace, repetitious action deleted, etc. When you have made these changes and are satisfied that the sequence is as good as you can get it, roll the film onto a reel, put it aside, then go on to the next one. After all sequences are completed in this manner, splice them together in the order planned or set forth in your script and screen the entire film for one final check. Seeing all of the action unfolding in proper order, you may probably observe some minor corrections still to be made.

Good editing depends not only upon the footage that is included in the final cut, but also upon that which is left out There is a natural temptation to include in final cuts a great bulk of the footage shot, whether it is up to standard or not. The film editor, especially in cases where he shot the footage himself, must exercise rigid discipline in deleting all excess footage and all scenes which are not up to his technical standards. In this way, he will not only have a more interesting and professional-like picture, but he will learn to make his photography more precise and expert

Scenes which are not technically bad, but which are deleted for other reasons, should be spliced together, catalogued by means of a brief descriptive list, and properly stored in cans. In this way, an interesting and valuable library of stock shots can be built up for possible use in future productions.

Ideally the editing of any serious film should begin even before the shooting stage. If you will roughly outline the sequences of scenes that you want to shoot in a certain locale, you will not only save film and insure better continuity, but will also he able to do quite a lot of cutting in the camera —thus reducing the actual editing chore to a minimum. Where such a scene list is made out in advance or at the time of shooting, it will prove a handy guide when editing—in addition to the regular picture script. ■

## PHOTOGRAPHIC ASSIGNMENTS

Continued from Page 16

### PARAMOUNT SUNSET

GILBERT WARRENTON, ASC, "Rescue 8"* (Cinefilm, Inc.) with Jim Davis and Lang Jeffries William Beaudine, director.

RAY FOSTER, ASC, Commercials* Dave Monahan, director

### REPUBLIC STUDIOS

ELLIS THACKERY, ASC, JOHN RUSSELL, ASC, JOHN WARREN ASC, "General Electric Theatre"* (Revue Prods.)

JACK MACKENZIE, ASC, ELLIS THACKERY, ASC, "State Troopers"* (Revue Prods.) with Rod Cameron

ELLSWORTH FREDRICKS, ASC, LIONEL LINDON, ASC, ELLIS THACKERY, ASC, "Schlitz-Lux Playhouse"* (Revue Prods.)

ELLIS THACKERY, ASC, "Wells Fargo"* (Overland Prods.) with Dale Rabertson. Earl Bellamy, director.

WILLIAM SICKNER, ASC, RAY RENNAHAN, ASC, 'Buckskin"* (Revue Prods.)

RAY RENNAHAN, ASC, WILLIAM SICKNER, ASC, "Cimarron City"* (Revue Prods.) with George Montgomery. Richard Bartlett, director

JOHN RUSSELL, ASC, WILLIAM SICKNER, ASC RAY RENNAHAN, ASC, BURT GLENNON, "M Squad"* (Latimer Prods.) with Lee Marvin.

ELLSWORTH FREDRICKS, ASC, MACK STENGLER, ASC, "Leave it to Beaver"* (Gomalco Prods.) with Barbara Billingsley and Hugh Beaumont. Norman Tokar, director

RAY RENNAHAN, ASC, JACK MACKENZIE, ASC, "Restless Gun"* (Window Glen Prods.) with John Payne. Edward Ludwig, director

JACK MACKENZIE, ASC, "Mickey Spillane's Mike Hammer"* (Revue Prods.)

JOHN WARREN, ASC, LIONEL LINDON, ASC. "Alfred Hitchcock Presents"* (Revue Prods.)

### HAL ROACH STUDIOS

EOWARD FITZGERALD, ASC, "The Gale Storm Show"* with Gale Storm and ZaSu Pitts. William Seiter, director

HOWARD SCHWARTZ "The Veil"* with Boris Karloff

### TWENTIETH CENTURY-FOX

JOSEPH MACDONALD, ASC, 'Warlock" (C'Scope & Color) with Richard Widmark and Henry Fanda Edward Dmytryk, director

WILLIAM MELLOR, ASC, "The Snow Birch" (C'Scope, DeLuxe color) with Susan Hayward and Stephen Boyd Henry Hathaway, director

JORGE STAHL, "The Little Savage" (C'Scope & Color; Associated Prods., shooting in Mexico) with Pedro Armendariz and Christine Martel Byron Haskin, director.

KARL STRUSS, ASC, "The Sad Horse" (C'Scope & Color, Associated Producers) with David Ladd and Chill Wills. James B Clark, director

### UNIVERSAL-INTERNATIONAL

ELLIS CARTER, ASC, U S Army Short, John Sherwood, director.

MARK DAVIS, ASC, Commercial*

CLIFFORD STINE, ASC, Commercial*

JOSEPH LASHELLE, ASC, "Twilight Zone"*, "Where is Everybody?"* (CBS pilots) Robert Stevens, director

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PHILIP LATHROP, "Peter Gunn"* (Sparta Prods.) with Craig Stevens "Steve Canyon"*, (Pegasus Prods.) with Dean Fredericks. Lamont Johnson, director

### WARNER EROS

JOSEPH BIROC, ASC, "The FBI Story" (Technicolor, shooting in N Y.) with James Stewart and Vera Miles. Mervyn LeRoy, director.

Continued on Page 64

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**Continued from Page 62**

HARRY STRADLING, ASC, "The Philadelphian" with Paul Newman and Barbara Rush Vincent Sherman, director.

OSWALD MORRIS, "Look Back in Anger" (Woodfall Prod , shooting in London) with Richard Burton and Claire Bloom Tony Richardson, director

HAROLD STINE, ASC, PERRY FINNERMAN, "Sugarfoot"* with Will Hutchins; "Maverick"* with Jack Kelly

PEVERELL MARLEY, ASC, EDWIN DUPAR, ASC, "Cheyenne"* with Ty Hardin.

RALPH WOOLSEY, ASC, WILLIAM MARGULIES, "Lawman"* with John Russell, Stuart Heisler, director.

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